

THE CHEMIST AND DRUGGIST

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and all sections of the drug, pharmaceutical, fine chemical, cosmetic, and allied industries

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The CHEMIST AND DRUGGIST

Volume 184

SEPTEMBER 11, 1965

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NATIONAL AND INTERNATIONAL AT CARDIFF CONFERENCE MEETING: Miss Sarah Morgan, charming in Welsh national costume, acts as hostess to Mrs. L. Devred, Belgium, Mr. and Mrs. L. A. Chatterton, Sheffield, Miss L. S. Catan, The Philippines, and Mr. L. Devred, Belgium. Reports of the Conference proceedings begin on p. 246.

Nielsen Index

"LIFT IN N.H.S. PAYMENTS"

AN 11 per cent. increase in the total average weekly turnover of retail pharmacies during the May-June period is reported in the current Nielsen *Retailer Report*. Turnover is stated to have reached £6,847,000. The marked increase above the figure for the previous period was largely accounted for by an increase of more than 20 per cent. in the N.H.S. receipts. "The dropping of the 2s. prescription levy has no doubt sparked off a considerable lift in N.H.S. payments, which will be very noticeable, by comparison, with a year ago, for each of the periods for the next twelve months." It is pointed out that the N.H.S. situation, together with the 2.5 per cent. lift in volume obtained from the revised sample based on the 1961 census of distribution, tends to overstate the movement of chemists' turnover. Average weekly cash sales in retail pharmacies were:—Multiples, £451; large independents, £490; medium independents, £270; small independents, £123. It is estimated that the multiple pharmacies obtained 39.5 per cent. of the total turnover during the period whilst the large, medium and small independents obtained 12.1, 21.7 and 26.7 per cent. respectively. The average weekly National Health Service pay-

ments per shop were:—Large independents, £330; multiples, £240; medium independents, £206; small independents, £127. During May independent pharmacies dispensed 66.7 per cent. of the National Health Service (an average of 1,376 per shop per month), whilst the multiple pharmacies dispensed 33.3 per cent. (an average of 1,959 per shop per month). National Health Service payments amounted to the record figure of 32.6 per cent. of the total turnover in multiple pharmacies and 42.9 per cent. in independents.

Drug Research

GRANT FOR STRATHCLYDE UNIT

THE Nuffield Foundation has made a grant of £50,000 to the University of Strathclyde to enable Professor J. B. Stenlake (professor of pharmacy) to set up a drug-metabolism research unit. The unit will provide a focus for biochemical studies in the University directed towards the development of new and safer drugs for use in human and veterinary medicine. It is intended to act as a forum for advanced training of graduates about to enter that field of work. Primary concern of the unit will be the metabolism and fate of drugs in the human body, but the study of the fate of food additives, and residues of pesticides, herbicides and anti-

biotics will also be included. The grant will provide for the adaptation of University premises to house the research unit and will meet the recurrent costs for staff salaries and other expenses in the first three to four years of the life of the unit. Once established, the unit will engage in collaborative studies with hospitals and industry of new drugs coming forward for clinical trial.

Training of Assistants

"RETAIL DISTRIBUTION BOARD IN 1966"

"IT now appears certain that the Industrial Training Board for Distribution will be established during 1966," says the chairman (Mr. F. W. Lawe) of the Joint Committee for the Award of National Retail Distribution Certificates in his statement for 1964-65. He goes on to say that the three National educational schemes (the Retail Trades Junior Certificate, the National Retail Distribution Certificate, and the Certificate in Retail Management Principles) will probably occupy an important position in the scheme. "It would therefore be a prudent move for retailers who do not at present support these courses (or the excellent alternative courses offered by several trade associations) to get 'in the swim' by encouraging appropriate members of their staff to register at the local col-

lege this September." There are now 115 colleges offering the junior course, sixty-four offering the N.R.D.C., and twenty-five the C.R.M.P., and lists of colleges may be obtained free on request from the Retail Trades Education Council, 56 Russell Square, London, W.C.1. The Council also offers to retailers a free Training Advisory Service. The regulations and syllabus of the national courses can be obtained from the City and Guilds of London Institute, 76 Portland Place, London, W.1. [A Pharmacy Assistant's Training Board was formed earlier this year as the result of discussions between the National Pharmaceutical Union, the Company Chemists' Association, Ltd., and the Co-operative Union (see *C. & D.*, July 17, p. 52). The Pharmaceutical Society's Council was given a mandate to join in the negotiations at the special meeting on July 25.—EDITOR.]

Local Health Services

CAPITAL PROJECTS HELD UP

THE Ministry of Health has issued to local authorities a circular explaining how the restrictions on public expenditure announced by the Chancellor of the Exchequer on July 27 are to be applied to the personal health and welfare services. Capital projects generally are to be deferred until six months after they would otherwise have started. Only for certain projects considered urgent or costing less than £20,000 will loan sanctions be issued before February 1, 1966. Local authorities are also being asked not to purchase land, stores and equipment in advance of requirements and not to increase staff except for urgently needed services.

Medical Research

B.B.C. "BREAKTHROUGH" PROGRAMME

THE last of the series of B.B.C. programmes on advances in medicine "Breakthrough," broadcast in the Home Service on September 2, dealt with general research. Dr. David Long (head of the medical research department, Wellcome Foundation, Ltd.) spoke on recent publicity given to multiple births following administration of human gonadotrophin. He said that, in trials carried out in Sweden during the past seven years, too high a dosage had been used, and more than 50 per cent. of mothers had produced more than one baby. It had been since found at Birmingham that, by measuring the excretion rate in the urine, the correct dose of gonadotrophin could be calculated. The vast majority of women were now producing only one baby per birth by use of the technique. Dr. Long warned that the treatment would help only a small proportion of infertile women and that the amount of substance available would be limited—at present it was being purified in the department of biochemistry at Cambridge University. A consultant at the Hospital for Sick Children spoke about congenital defects caused by infection with *Rubella* during pregnancy. He forecast the development of a vaccine, but said that the problem of the vaccine's becoming infectious after administration of

a live vaccine would have to be overcome. A worker at the Post-graduate Medical School of London described the use of allopurinol in gout. The compound prevents the formation of uric acid by inhibiting the action of xanthine oxidase, so that for the first time blood levels of uric acid can be lowered. Although still under trial, the drug was expected to be in general use by 1966, unless unsuspected toxic effects were found. Other speakers in the programme dealt with the "banking" of cartilage cells, and a possible means of detecting breast cancer in the early stages.

Hydrocarbons in Food

PROPOSED CHANGES IN REGULATIONS

THE Government proposes to amend the Mineral Hydrocarbons in Food Regulations, 1964, by revising the specifications for mineral hydrocarbons and by introducing an improved test for potential carcinogens. No amendment will be made to the amount of mineral hydrocarbons at present permitted in certain specified foods. Copies of the proposals for amending regulations in respect of England and Wales may be obtained from Food Standards Division, Ministry of Agriculture, Fisheries and Food, Great Westminster House, Horseferry Road, London, S.W.1. Similar proposals in respect of Scotland and Northern Ireland are being issued by the appropriate Departments. Comments on the proposals should be forwarded to arrive not later than October 18.

Animal Health

REPORT ON 1963 RECORDS SUCCESSES

A REPORT just published on the Animal Health Services in Great Britain (H.M. Stationery Office, price 8s.) discloses that 1963 was the first calendar year for forty-eight years (since 1917) in which Great Britain was entirely free from outbreaks of foot-and-mouth disease and that, in swine fever, the introduction of a slaughter and compensation policy had resulted in a considerable decline in the number of outbreaks (1,874 in 1962; 1,243 in 1963). As a result of the use of dead vaccine, the number of fowl-pox outbreaks dropped from 3,384 recorded cases in 1962 to 2,288 in 1963, and bovine tuberculosis continued steadily to decline (9,780 reactors in 1962, 5,901 in 1963). The report also gives results of experiments undertaken by laboratories and on farms to diagnose, control and eradicate animal disease.

Agricultural Chemicals

DICUAT-DIBROMIDE DESICCANTS

THE Ministry of Agriculture, Fisheries and Food advises farmers that desiccants of the dicuat-dibromide type should not be used to kill off second growth of cereal crops or ground-keeper potatoes in wheat crops. At this time of year such desiccants are normally used to destroy potato haulm or for pre-harvest desiccation of clover seed crops and have been cleared for use in this way under the pesticides safety precautions scheme. Their use on

mature cereal crops has neither been recommended by the manufacturers nor agreed by the Agriculture and Health Departments. Such use might possibly present a hazard to human or animal consumers of the treated crop, but information to establish or refute this is lacking.

IRISH NEWS

THE REPUBLIC

Proprietors Fined

BREACH OF PHARMACY REGULATIONS

SEAN McEniff and others, proprietors of Bundoran Pharmacy, Main Street, Bundoran, were ordered to pay a total of £37 in fines, costs and expenses by district justice Larkin at Ballyshannon court on August 20 for breaches of the Pharmacy Regulations. They were fined £5 under section 30 of the Pharmacy Act for keeping open shop without the services of a properly qualified person; 10s. under section 2 of the Poisons Act for failing to comply with the regulations in connection with the sale, by an unqualified person, of a Part 1 poison; 10s. under section 17 of the Pharmacy Amendment Act, 1890, and 10s. under section 3 of the Pharmacy Act, 1962, plus costs and expenses. The defendants, through their solicitors, pleaded guilty. The facts were outlined by Mr. John Gaynor (solicitor for the Pharmaceutical Society of Ireland), and an undertaking was given on behalf of two of the defendants, who were not qualified, that they would not carry on the business of a pharmacy in the premises under any circumstances.

THE NORTH

Council Election

DATE FOR NOMINATIONS

MEMBERS of the Pharmaceutical Society of Northern Ireland are reminded that nomination papers for candidates for election to the Society's Council must be submitted by noon on September 13.

OVERSEAS NEWS

SOUTH AFRICA

"Efficient Policing" Wanted

AT their annual meeting to be held during September South African pharmacists are to debate a request for strong Government action against the indiscriminate supply of oral contraceptive tablets. They want "efficient policing" of regulations to ensure that "The Pills" are not taken by the wrong women, according to a correspondent in the London *Sunday Times* (September 5).

UNITED STATES

Explosion at Chemical Works

DAMAGE to the Du Pont Co.'s neoprene plant at Louisville, Kentucky, U.S.A., is said by the company to be much less than first feared. After initial engineering evaluation, it appears that most of the damage was confined to two units in the monovinylacetylene section of the plant. It was damaged by a series of explosions on August 25 when ten persons were killed and one was missing. Loss is estimated at \$5-10 millions.

NEWS IN BRIEF

COPIES of the Hire Purchase Act, 1965, are now available (H.M. Stationery Office, price 4s.).

A "MUSCULAR Dystrophy Week" post-mark slogan is being stamped on envelopes at twenty-two Post Office sorting offices September 27 to October 24.

DR. K. L. G. Goldsmith, former deputy director of the Medical Research Council Blood Group Reference Laboratory, succeeded Dr. A. E. Mourant as director on September 1. The laboratory is administered by the M.R.C. on behalf of the Ministry of Health.

A GRANT of \$125,000 from the Wellcome Trust will add a Wellcome research laboratory to the new Clinical Research Institute affiliated to the University of Montreal, Hotel-Dieu Hospital, Canada. The laboratory will study the rôle and function of the renin-angiotensin system in hypertension.

APPLICATION forms for the Queen's Award to industry, the scheme for which was announced by the Prime Minister following the report of the Duke of Edinburgh's Committee (see *C. & D.*, August 14, p. 147), are now available from the Office of the Queen's Award to Industry, 1 Victoria Street, London, S.W.1.

A BOOKLET that gives the papers read, and a summary of the discussion, at the symposium on sterile products held by the International Pharmaceutical Federation Section of Industrial Pharmacists, Amsterdam, in September 1964 is being published at the end of the year. Orders should be sent before October 1 to Dr. O. S. K. Mars (treasurer of the section of industrial pharmacists) Nederlandse Handelmaatschappij, Spaarne, Haarlem, Holland, with remittance (Hfl. 6.—per copy) payable to the account of Dr. Mars at the Nederlandse Handelmaatschappij.

SPORT

Sponsored Knock-out. — Gillette Industries, Ltd., sponsors of the County Cricket knock-out competition, could well have thought till late on the morning of the final of September 4 that the weather was over-emphasising the "wet" character of the shaving process associated with their name. But by a close shave there was—half-mixing the metaphor—a Super Silver lining, for play began at 12.15 and the blades of Yorkshire's Boycott and Close were soon flashing merrily towards a total of 317 for four, delighting the company's 24,000 potential customers present as spectators. Surrey's gesture to the sponsors was a quartet of good clean-shaven 0's in a score of 142.

Golf

MANCHESTER PHARMACEUTICAL GOLFING SOCIETY. —The annual competition for the Imperial Chemical Industries, Ltd., Avlon trophy was held at Ormskirk golf club on August 25. Winner was S. Speight with W. Atkinson runner-up.

IRISH CHEMISTS' GOLFING SOCIETY. —An exceptionally large number of members turned out for the meeting at Clontarf on September 1 for prizes presented by Rybar Laboratories, Ltd., later presented to winners by Dr. Michael Ryan at dinner in the club house. *Results: Strokes*, 1, R. D. Arnold (captain) (12), 63; 2, D. Leahy (17), 68. *Par competition*, 1, A. C. Hennessy (10), 1 up; 2, A. Walsh (11), 1 down. *Best score on first nine holes*, P. O'Neill. *Best score on second nine holes*, J. T. Foley. *Best gross score*, T. J. Lynch. The final outing of the season is at Elm Park on September 29, followed by the annual dinner.

TOPICAL REFLECTIONS

By Xrayser

Deletions

The publication of a list of proposed deletions from the next edition of the British National Formulary (p. 211) is a reminder that pharmacopœias are merely a reflection of life itself, in which old friends drop out and passing acquaintances simply pass. The older one becomes, the more difficult it is to remember and to place the characters of, say, one of the immortal works of Charles Dickens. The memory becomes less reliable, either because of a natural process, or because the accommodation in which we store such information is beginning to suffer from overcrowding. There is, in most of us, a tendency to hold on to the tenants who came first, and consequently we occasionally surprise ourselves with how much we retain from our early and more receptive years. There was a time when I could, with complete certainty, reach out a hand for the B.P. or the B.P.C., knowing that I should find what I wanted, and knowing in which volume it would be, for I knew that particular pharmacopœia as an old soldier knew his King's Regulations. But new and improved pharmacopœias began to make their appearance with what seemed to be startling frequency, and I began to find, quite early, that some things were no longer in the B.P., though the B.P.C. had hospitably given them sanctuary. Though that was a trifle unsettling, it was possible to come to terms with the new situation—to learn that, if reference to the B.P. was unproductive, the companion volume would not be found wanting. As time went on, the B.P.C. found itself short of accommodation, and it, too, began to discard. Some degree of mental confusion began to develop, saved from complete breakdown only by the possession of what described itself as an "extra" pharmacopœia. And, as the new editions of the B.P. made their appearance, one began to find that they were so compiled as to make essential a comprehensive index, for no longer was it possible to find things under the Latin headings or to turn to the section devoted to extracts, or ointments, or tinctures. Improvements have a nasty habit of upsetting the old!

1966

Now, in the list of proposed deletions from the British National Formulary of 1966, some old friends are dropped from sight—for example soap liniment, a form of which was named opodeldoc by Paracelsus. Surely *lin. saponis*, of all the preparations listed, comes into the category of an old friend! Despite the official farewell, one would be unwise to imagine that that is the end of it. Some years ago we witnessed the retirement from official life of such apparent fixtures in pharmacy as the blue pill and the Seidlitz powder, but the withdrawal of official approval has not led to a cessation of public demand, even if that demand stems principally from an older generation. I sold opodeldoc only yesterday and, regardless of proposed deletions, I know of doctors who have not yet lost faith in sulphur ointment. And there may still be coughs that do not despise paregoric elixir, either by itself or in the company of other drugs. Zinc sulphate lotion, also, has had an honourable career, even when its colour and pleasant aroma came from a compound lavender tincture. I have seen evidence of its virtues over the years, and I cannot think it has lost all its power for good.

Passing acquaintances

It seems only a short time since I first dispensed succinylsulphathiazole, but it is already heading for that oblivion which it has taken opodeldoc 250 years to reach. Reserpine and injection of oxytetracycline and procaine take an early leave of us, though I must confess that the latter has been only a book entry to me. How can they ever hope to join, in honourable retirement, such veterans as those I have mentioned, or zinc and camphor ointment? I once saw a prescription that had been written in the early eighteenth century for just such a preparation. Has it been an impostor for 250 years? If it is possible in this field to predict at all, I would guess that none of today's medicines will find favour in A.D. 2200.

□ **BRITISH PHARMACEUTICAL CONFERENCE CARDIFF 1965** □

102nd meeting opens at Cardiff

MEMBERS ARRIVE AND REGISTER

NOT until the late afternoon on Sunday did the local reception committee at Cardiff begin to see Conference members in any number, though there had been a few early arrivals during the morning. In fact some had come to Cardiff on the previous day specially to see a match at Cardiff Arms Park. Registrations at the previous Cardiff meeting in 1930 totalled 700.

Visitors this year from overseas numbered pharmacists from Australia, Denmark, France, Ghana, Holland, Israel, Nigeria, the Philippines, Syria and the United States. The local committee had arranged coaches at the station to meet and convey Conference members to the Conference office at the Welsh College of Advanced Technology, where documents were collected. Most members took them into the College dining hall, to look them through. Refreshments were there available, some offered by attractive young ladies in Welsh national costume — daughters of the local Committee members. Many members expressed disappointment when it was reported that Mr. H. Humphreys Jones — *doyen* of Welsh pharmacy — would not be present owing to illness. That other Conference veteran, Professor Wallis was, however, again present — he was to be seen later in the afternoon casting a professional eye at a tree trunk on a grass verge outside the College.

The reception committee's excellent arrangements were immediately evident from the extraordinarily efficient signposting, enabling everybody to move around without difficulty in the modern college building, which drew praise — and a little envy — from some who remembered the less satisfactory conditions and buildings that had obtained at Cardiff in their student days. The ladies were heard to comment approvingly upon the wide variety of excursions that had been arranged for them, ranging from Llandaff cathedral to fashion displays and Welsh cookery demonstrations. The hint that the ladies should wear comfortable shoes on the Wye Valley excursion did not pass unnoticed.

Members who arrived early were able to meander around the Cathays Park area in which the Welsh College of Advanced Technology (W.C.A.T. in the programme) is situated along with "one of the finest groups of public buildings in Britain" — the City Hall, Law Courts, National Museum of Wales, University College of South Wales and Monmouthshire, Temple of Peace and War Memorial Gardens.

Floodlighting

By special arrangement Cardiff Castle and some other public buildings were floodlit "for the enjoyment of members of the Conference during the week."

Opening Session

THE 102nd meeting of the British Pharmaceutical Conference was opened in the great hall of the Welsh College of Advanced Technology by the president of the Pharmaceutical Society (MR. J. C. BLOOMFIELD) on Monday morning. Mr. Bloomfield said that the office of president of the Society carried with it the responsibility but the enjoyable privilege of being Conference president. The Conference had been on a cycle of visits to the capitals of Britain. Now it met in Wales, and possibly many present that day would question the order in which its perambulations had been made. "May I comfort them with the words of the Biblical text . . . 'And the first shall be last and the last first'."

Third Visit to Cardiff

The occasion was the Conference's third visit to Cardiff, the first having been in 1891, when in his presidential address William Martindale had referred to the pharmacist and his relationship with the public. It was coincidental that the topics of the two professional sessions in the present week would deal with that very subject.

In the scientific sphere — and one must remember that that was the primary object of the Conference — members would be privileged to hear and discuss thirty-one papers. Of regular contributors to the science sessions Mr. Bloomfield mentioned "our revered internationally distinguished pharmacognosist . . . our own emeritus curator: Dr. T. E. Wallis" (*applause*). Professor Wallis deserved members' warmest congratulations and thanks for his many years of loyal and devoted service. Mr. Bloomfield was sorry that, owing to illness, Mr. H. Humphreys Jones, who was to have been present, was unable to attend, and he therefore asked that a message should be sent to Mr. Humphreys Jones wishing him a speedy recovery to health. "I trust we shall be honoured with the presence of them both for many years to come."

The deputy lord mayor (Mr. N. C. Nyman, LL.B.) said that, when he heard he was going to be asked to open the Conference, he did not know whether he should wear his badge of office or his "purple heart" (*laughter*). He was glad the Conference had come to Wales, and it was appropriate that it should have come to Cardiff at the opening of the rugby football season. "You may have had good Conferences elsewhere, but you will never see good rugby like you will in Wales!" Mr. Nyman was pleasantly surprised that around 750 members were attending the Conference — "I thought that, to fill a hall like this nowadays, you had to be a Beetle." From the history of the Conference and of the Society it could be seen that both had gained in stature over the years. The Welsh

College of Advanced Technology was soon to have university status, and it was thus appropriate that the Conference should be held in Cardiff. He wished members a good Conference, which he then officially declared open.

MR. BLOOMFIELD thanked the deputy lord mayor for his welcome. In handing over the conduct of the meeting to the Conference chairman (Mr. T. C. Denston) he said he was sure Mr. Denston would fill that office with distinction. The gavel he would use had been presented to the Cardiff Branch of the Pharmaceutical Society on the occasion of the last visit of the Conference to Cardiff in 1930. MR. DENSTON then gave his address (p. 248).

Speaker's Comprehensive Knowledge

Proposing a vote of thanks to Mr. Denston, DR. FRANK HARTLEY (dean of the School of Pharmacy, University of London) said that he had learned to respect and admire Mr. Denston's comprehensive knowledge of pharmacopœias. He also referred to Mr. Denston's clear recognition of the limitation of pharmacopœias. He recalled that, at the 1934 Conference meeting, when Dr. Hampshire was chairman, the subject of the chairman's address had also been pharmacopœias. During that meeting it had appeared that a pharmacopœia of the future would be almost entirely concerned with standards. That had become so during the intervening thirty-one years. It had been suggested that the pharmacopœia was now only a book for those concerned with standards. How far that statement was from the truth had been illustrated in the chairman's address. All in professional work were concerned with the quality of the materials they handled, and pharmacists were the channel through which the quality expected by the prescriber was safeguarded. "Our task on behalf of both prescriber and patient is to safeguard quality, not only by limitation of impurities, but also by preventing undue variability of the product." Pharmacopœial standards were not the standards to which manufacturers should work. "A manufacturer who relies only on the specification of a pharmacopœia does so at his peril." There was hope of progress in pharmacopœias on a regional and international basis, and in that progress their chairman had played a leading part. MR. BLOOMFIELD formally seconded the motion.

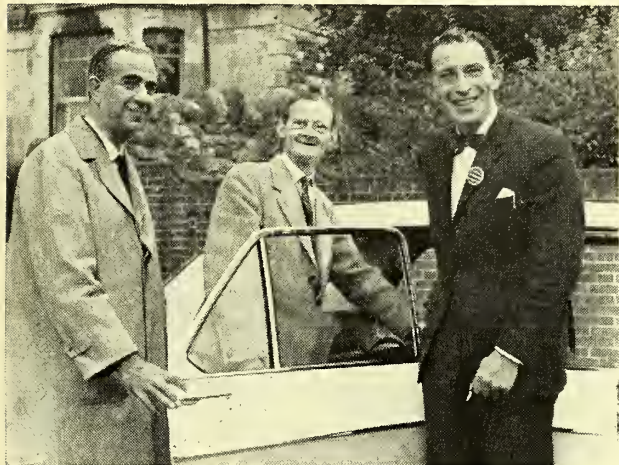
CONFERENCE BREVITIES

MR. DENSTON spoke on television on Monday night. He referred to the work of the Dunlop Committee in the standardisation of drugs.

During Sunday afternoon, Cardiff committee members managed to find accommodation for a number of members who had arrived without having given advance notice that they would be attending.

□ **BRITISH PHARMACEUTICAL CONFERENCE CARDIFF 1965** □

Arrivals from all parts



FROM THE MIDDLE EAST AND THE SOUTH-EAST (of England): Professor Amin Haddad from Beirut, Syria, and Mr. F. Ashworth, Dartford, with Mr. C. J. G. McKelvey (a local committee member).



"REGULARS" FROM EASTERN ENGLAND: Mr. and Mrs. A. Pirnie, Colchester, Essex, being received by Mr. D. P. Howell, Cardiff, at the Conference office.



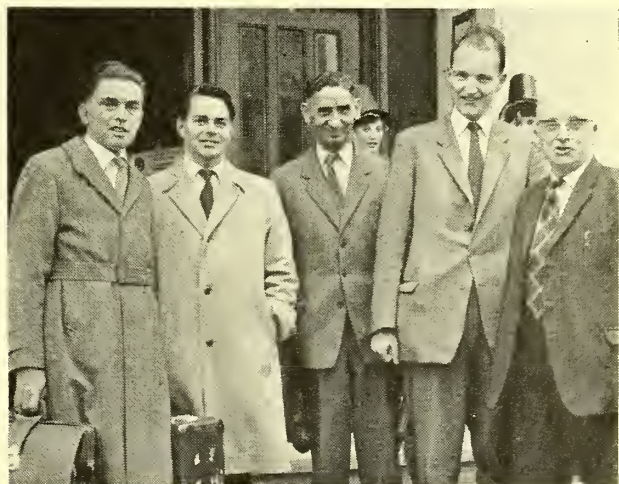
NOT SO FAR THIS TIME: Mr. D. S. Evans, Fishguard, arriving at Cardiff General Station for his fourteenth Conference, being met by Mr. A. D. Cromwell Morgan (transport chairman).



MAINLY SCOTS : Standing are Mrs. J. W. Goodchild, Brightons-by-Falkirk, Dr. G. H. Macmorran (secretary of the Pharmaceutical Society's Scottish Department) and Mr. J. S. Archibald, Dunfermline, Fife. Seated are Mrs. Archibald, Mrs. MacMorran and Mrs. Goodchild, Miss M. Hodges, Cardiff, and Miss C. Walsh, London, N.W.3.



MIDLANDERS RECEIVE THEIR "GEN": Dr. and Mrs. G. S. Cox, Birmingham, sign on at the College of Advanced Technology. Receiving them is Mr. H. Gibbor, Cardiff.



FROM SOUTH-WEST AND SOUTHERN ENGLAND: Messrs. G. S. Riley, Bristol, 7, T. M. Jefferies (school of pharmacy, Bristol), E. Addams, Cosham, Portsmouth, R. A. Francis and N. Francis, Portsmouth.

□ **BRITISH PHARMACEUTICAL CONFERENCE CARDIFF 1965** □

CONFERENCE CHAIRMAN'S ADDRESS

Pharmacopœias and Drug Standards

THIRTY years have elapsed since pharmacopœias were the subject of the opening address to this Conference. That period, and especially in the past twenty years, has seen an unprecedented flow of new pharmaceutical preparations spreading through most countries of the world.

Before recording the work carried out in Britain, the developments of some other national pharmacopœias may be briefly noted. The countries I have selected are, with one exception, in Western Europe. Those countries are also of interest because, in five instances, they are members of the Council of Europe (Partial Agreement) under whose authority work has commenced on a European Pharmacopœia to which reference will be made later. Many countries have no pharmacopœial organisation and, as far as I am informed, there are fewer than twenty national pharmacopœias in active course of preparation or revision at the present time. In the American continent only four of the twenty-one republics have issued a pharmacopœia during the past twenty years.

National pharmacopœias

At the end of the 1939-45 war the pharmacopœia official in France was the sixth edition, published in 1937. It contained nearly 1,300 monographs, including many vegetable drugs, about forty solutions or suspensions for injection, but no compressed tablets. It was superseded in 1950 by a slightly smaller edition which again contained no monographs on compressed tablets. A small supplement was issued in 1954 and the eighth edition did not appear until this year—an interval of fifteen years. Monographs on tablets are still omitted and the preparations for injection number only twenty-five out of a total of 902 monographs.

Western Germany has shown less activity in publishing a new pharmacopœia. The sixth edition, which became effective in 1927, remains the official volume, but it is the intention to publish a new edition in 1966.

The progress of the Belgian Pharmacopœia is not dissimilar to that of Western Germany. The edition of 1930, with supplements in 1940, 1951 and 1953, remained effective until this year when it was superseded by the fifth edition. This new edition is issued in loose-leaf form and three volumes.

Although the current edition of the Swiss Pharmacopœia is more than thirty years old—it was published in 1934—much work has been carried out in that country in providing official standards for drugs. Supplements were published in 1948 and 1955 and a third supplement has appeared in three parts—in 1958, 1960 and 1962. It is intended to complete publication during 1967.

The Spanish Pharmacopœia official

twenty years ago was the eighth edition, published in 1930. In 1954 the ninth edition appeared, unfortunately it deals almost entirely with older drugs and



Mr. T. C. Denston, B.Pharm., F.P.S., F.R.I.C.

preparations and is in no way commensurate with the advances made in medicine and pharmacy during the past generation. No supplements or addenda have been published and there is no new edition in prospect.

A new edition of the Italian Pharmacopœia has been promised for 1965. It will replace the sixth edition published in 1940—a larger volume.

Until 1960 the official Netherlands Pharmacopœia was the edition published in 1926, with supplements issued in 1934, 1939 and 1959. It is intended to replace the current edition in 1966.

Pharmacopœia of the United States

No account of national pharmacopœias would be adequate without reference to the United States Pharmacopœia which, over many years, has pursued a vigorous policy of revision. As with the British Pharmacopœia, new editions have appeared every five years and the 17th revision was published a few months ago. Great care is exercised in admitting new medicinal substances, and outmoded or discredited drugs are not retained. In so far as a substance described in the U.S.P. is administered in the form of capsules, injections or tablets, monographs on those preparations are included. Modern analytical techniques are applied in the monographs and described in appendices. Full specification for antibiotics and immunological products are not included since the legal requirements are provided by the agencies of the Federal Department of Health, Education, and Welfare, namely the Food and Drug Administration for the former and the National Institutes of Health for the latter group.

A novel feature of the new U.S.P. is a requirement for the uniformity of content of medicament for each of a batch of tablets. Reports have appeared indicating that quite alarming variations may be found in the content of medicament within the individual tablets of a single batch, a fault attributable to defects in formulation or manipulation and more likely to arise in tablets with proportionately small amounts of medicament. The test for content uniformity is applied by selecting a representative sample of thirty tablets and assaying ten of them individually. If all results fall within 85 to 115 per cent. of the average of the tolerances specified in the monograph, the tablets pass the test. If one, but not more than one, tablet falls outside those limits, the remaining twenty tablets are assayed individually and the requirements are met if not more than one of the thirty tablets is outside the limits of 85 per cent. to 115 per cent.

It will be seen that the various national pharmacopœias show a great disparity in content, scope and the nature of the specifications and the analytical techniques employed.

British Pharmacopœia

Work on the British Pharmacopœia has proceeded under a Commission and with a full-time staff for more than thirty-five years. New editions of the British Pharmacopœia appeared in 1948, 1953, 1958 and 1963 and for each edition an Addendum was issued in order to reduce the delay in providing official standards, chiefly for some of the newer drugs.

A comparative study of those editions shows some significant changes. The strong trend towards the so-called dose-form preparations is reflected in the number of monographs on capsules, tablets and injections which has increased sixfold over the last twenty years.

The traditional use of Latin titles and a strictly alphabetical arrangement of the monographs ended in 1953. That change in the Pharmacopœia may have been overdue, but at the time there were some strong criticisms. They are now rarely heard.

As long ago as 1914 the preface to the Pharmacopœia, in stating that the metric system was "employed for all pharmaceutical and analytical computations" and for "the specification of doses," expressed "the expectation that in the near future the system will be generally adopted by British prescribers." For nearly fifty years the "Imperialists" fought a rearguard action, and occasional skirmishes by the duodecimalists in the metric camp enlivened the combat. In 1955 the Pharmacopœia Commission, in a report by its chairman which was accepted by the General Medical Council, ex-

pressed the view, which was repeated in the British Pharmacopœia 1958, that arrangements should be made so that the Imperial system of dosage might be abandoned in the next edition. After discussions with interested organisations, the remnants of the Imperial system—they appeared only in the monographs on the older drugs and preparations—were eliminated. Legislation followed the publication of the British Pharmacopœia 1963, in which the strengths of all capsules, injections and tablets to be supplied in the absence of directions are given in metric units, except in those instances in which units of biological activity apply. To ease the transition a period of grace was allowed. For the "manufacturer or wholesale dealer" the interim period during which pharmacopœial preparations may be issued in either Imperial or metric units has now expired and after January 31, 1966, the "retail dealer" will cease to have the option, and must dispense or supply those articles in metric units.

The contents of the monographs have changed with developments in analytical chemistry by the application of such techniques as complexometry, non-aqueous titration and chromatography, but the most conspicuous change has been the wide adoption of instrumental methods—particularly ultra-violet and infra-red spectrophotometry.

In May of this year the British Pharmacopœia Commission announced its intention to include in the next edition the requirement that substances added in the preparation of tablets and capsules must be such that they do not interfere with the official method of assay. When monographs are prepared, the tablets or capsules available at that time are tested in the laboratory in order to ensure that the assay procedure is suitable, but experience has shown that samples may appear later which, owing to the presence of different added substances, cannot be assayed by the official method. The Commission is willing to consider modifications of the official assays when cases of difficulty are brought to its attention.

On a Wider Basis

In addition to work on national pharmacopœias, the post-war years have seen three projects on a wider basis, two towards the establishment of regional pharmacopœias, and the third the production of an international pharmacopœia.

From April 1965 the Nordic Pharmacopœia has been official in Denmark, Finland, Iceland, Norway and Sweden. It comprises four volumes, with an addendum, issued in loose-leaf form. This is the first occasion on which a pharmacopœia has been established for official use in several independent countries. In addition to the obvious advantages of securing common specifications for a large number of drugs, the collaborative work, by utilising the experience of more specialists, has brought considerable improvement in the quality of the pharmacopœia.

Work on a second regional pharmacopœia has commenced under the auspices of the Council of Europe. The

concept of a European Pharmacopœia developed from collaboration in a wide range of pharmaceutical matters between the Health Ministries of the members of the Brussels Treaty Organisation, later of Western European Union, and finally of the Council of Europe (Partial Agreement). The project for this regional pharmacopœia is governed by a "Convention on the Elaboration of a European Pharmacopœia" which was signed on behalf of the Government of the United Kingdom of Great Britain and Northern Ireland in September 1964; it will enter into force after it has been signed on behalf of all the eight governments concerned.

There is no intention to abolish the national pharmacopœias of those countries, but it is required of the member countries that the specifications established in the European Pharmacopœia—and they can be established only by the unanimous agreement of the national delegations appointed to the Commission—shall become the official standards in the member States. That unreserved commitment is in contrast to some earlier arrangements for international drug standards. A technical secretariat has been appointed at the headquarters of the Council of Europe in Strasbourg, and laboratory facilities are to be provided. On the recommendations of national delegations, the Commission has appointed groups of experts to advise on the general analytical methods—chemical, physical and biological—and on general editorial style and nomenclature. A first list of monographs has been selected and groups of experts have been similarly appointed to advise on the specifications. The experts from the United Kingdom are associated with the work of the British Pharmacopœia and come from the universities, industry and the Commission's staff.

An Arduous Task

It will clearly be an arduous task to reconcile national differences in methods of analysis and concepts of the proper standards of purity and potency of drugs. Success will depend on the continued enthusiasm of the members of the European Commission, the effort that can be devoted to the work, the adequacy of the facilities that are made available and the spirit and goodwill with which the problems are approached. It is unreasonable to expect that a sound, comprehensive European Pharmacopœia can be produced within a few years. The Nordic Pharmacopœia Commission, with the advantage of many years of close association between the member countries in scientific and other fields, required fourteen years in which to compile the first edition of its regional pharmacopœia.

The International Pharmacopœia as it exists today developed from work begun in 1937 by a technical commission of the Health Organisation of the League of Nations. Work was suspended in 1939, but the formation of the World Health Organisation provided the opportunity for the resumption of activity in 1947. A panel of experts was appointed and a technical secretariat established in Geneva. The first

volume of the International Pharmacopœia was published in 1951 and comprised 218 monographs, with appendices, on well-established drugs in use in many countries. Much credit for the appearance of this volume is due to the late C. H. Hampshire, a former chairman of this Conference. Volume II appeared in 1955 with 217 monographs and in 1959 was published a supplement containing a further ninety-four monographs, including a few somewhat newer drugs and twenty-three tablets. That supplement makes it clear that the International Pharmacopœia is not intended to have legal status as such in any of the member states of the World Health Organisation. In that respect there is a fundamental difference between the International Pharmacopœia and the European Pharmacopœia, now in course of preparation, which will be binding on the participating countries. Revision work has proceeded on the International Pharmacopœia, and a second edition comprising most of the monographs in the three volumes of the first edition with some additions, is now with the printer. It will deserve close attention by those concerned with specifications for drugs.

The British Pharmacopœia

In the present British Pharmacopœia we now have not only a wide range of drugs and preparations, including many of recent introduction into medicine, but also the application of more complicated and accurate methods of assay and standardisation. The volume is under continuous revision in order to keep abreast of progress in therapeutics, pharmacy and chemistry. In revising the current edition particular regard is being paid to possible impurities in drugs.

It may also be prudent to include general tests intended to detect totally unexpected or unknown impurities.

Although the scope of the British Pharmacopœia is wide, it still retains a measure of selection of good drugs established in significant use and there are two other classes of drugs that call for attention, namely those preparations already established in use but not described in the Pharmacopœia, and those new drugs that are being introduced on to the market. Should independent and official standards, with methods of assay and test, also be adopted for those two groups? For established drugs, the British Pharmaceutical Codex has gone some way by publishing some hundreds of standards for drugs not in the Pharmacopœia, but there remain some thousands of medicinal preparations without official specifications that could be invoked by an analyst when he examines samples. In so far as it is a function of the official compendia to protect the prescriber and the patient by setting adequate standards of purity and potency, there is clearly a wide gap in the protection now provided.

Until the Committee on Safety of Drugs came into operation in January 1964 there was no specific control in Britain of the quality of drugs placed on the market except for the relatively small number of preparations for which biological methods of assay and

test are essential. Those materials are subject to the requirements of the Therapeutic Substances Act and Regulations. In some other countries much wider control has been exercised for a number of years. Sweden provides an example of great care being exercised by the authorities in satisfying themselves that a new drug is not only safe and efficacious but that proper regard is had to pharmaceutical quality control. A manufacturer in Sweden who believes that he has a new substance showing promise of therapeutic value must, before any clinical trials are carried out, inform the State Pharmaceutical Laboratory of the situation with full information of the work, including toxicity testing, that has been carried out. If the Pharmaceutical Laboratory is satisfied with the evidence, permission for clinical trial is granted on condition that a full report on the clinical trials is supplied to the Laboratory by those who undertake the work. If the manufacturer then wishes to place the drug on the market he must submit an application to the Medical Board with details of the substance, including a full declaration of the composition of the form or forms in which it is intended to issue it, and the results of chemical, physical, biological, pharmacological and clinical tests. The information is treated as confidential, and the applicant is required to pay an initial fee of about £70 and there is an annual fee if the application is accepted by the Medical Board. The manufacturer must also supply the Pharmaceutical Laboratory with samples of the finished products, samples of all the ingredients used and copies of printed information on labels and leaflets. The Medical Board delegates the assessment of the application

from the manufacturer and the report from the Pharmaceutical Laboratory to a committee of five, consisting of a lawyer, a pharmacologist, a clinician, a pharmacist and a chemist, all of the highest standing. It is almost unknown for the Medical Board to question the recommendation of its committee. Until recently, the State Pharmaceutical Laboratory conducted before release of the drug a full laboratory investigation of the samples and data supplied by the manufacturer. At the present time that laboratory work is carried out shortly after the drug is issued, usually within a few months and if any defects are detected or claims are not verified the drug must be withdrawn immediately from the market.

Legislation Awaited

In Britain we await new medicines legislation to provide a procedure, with statutory authority, for the assessment of safety and efficacy and the quality control of pharmaceutical preparations. In the meantime the Committee on Safety of Drugs, working with the voluntary co-operation of industry, is providing considerable safeguards to the prescriber and patient in respect of the safety of new drugs.

I have attempted to give a brief outline of the work that has proceeded over the past twenty years in the preparation of some pharmacopœias, and the work now in progress on the national, regional and international level. I have referred to the growing importance of the adequate specifications for the purity and potency of all pharmaceutical preparations. What basic considerations should be borne in mind in plans for meeting those needs?

First, the exact nature and purity of

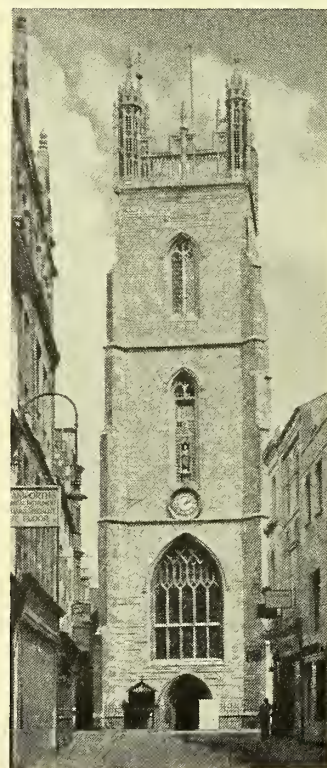
a new drug going for trial must be thoroughly known. For the independent critical and authoritative examination of proposed specifications and the establishment of agreed standards, there must be an organisation working closely, and with mutual respect, with the scientific staff of manufacturers. That organisation will need to have access, on a confidential basis, to all relevant information, including production and quality control data.

Even that close association may not be sufficient to allow reliance on written specifications as a guarantee of adequate control. In many, and perhaps all, instances, proper safeguards will depend also on good manufacturing practice.

All good new drugs are likely to be international drugs in the sense that they will be distributed throughout many countries. The official specifications for them should, therefore, be elaborated with a view to international acceptance—either by their adoption in individual national pharmacopœias or by their adoption in a regional or in an international pharmacopœia. There must, however, be provision for the prompt revision of the specifications as circumstances demand.

National pharmacopœias will, therefore, continue to play an important rôle.

In order to discharge their responsibilities, the control authorities will need adequate facilities in personnel and laboratories, and the most important rôle will fall to the pharmacist and the pharmaceutical analyst. We must look to the schools of pharmacy to provide the proper basic training for those who, in increasing numbers, should enter this field of pharmaceutical work.



NATIONAL, CIVIC AND ECCLESIASTICAL: Pictures taken by Reece Winstone at Cardiff's Civic Centre (left), showing a corner of the National Museum of Wales and the 200-ft. tower and dragon-topped dome of the City Hall, and (right) St. John's Church, where a service for pharmacists was held on Sunday.

□ **BRITISH PHARMACEUTICAL CONFERENCE CARDIFF 1965** □

CONFERENCE LECTURE

Anæsthesia : Art or Science ?

By PROFESSOR WILLIAM W. MUSHIN, M.A., M.B., B.S., F.F.A.R.C.S.

[ABSTRACT]

I AM sure I am on firm ground in assuming that you are all more or less familiar with the kind of procedures now carried out as a routine by modern anæsthetists. You must be aware of the dexterity with which he inserts breathing tubes into the trachea to ensure a perfect airway. You probably know of the injection of curare-like drugs which have so revolutionised abdominal surgery and post-operative recovery from it, and of the practice of intermittent positive pressure ventilation of the lungs which has made open-chest operations as routine and as safe as the abdominal ones. It is now commonplace for machines of great complexity to ventilate the lungs artificially, and for others which monitor almost every physiological system in the body to provide essential information for the guidance of the anæsthetist.

What you may not perhaps be so aware of is the intellectual effort which has been responsible for extending the growing edge of anæsthesia and which is making more understandable and therefore more safe the complex processes of anæsthesia which for 100 years, were, for some peculiar reason, regarded as simple.

I can only place under your eye in this session just a few examples to help you to appreciate the great content of science as distinct from art in anæsthesia. I want you to leave this hall with the feeling that the anæsthetic practices in the operating theatre and in the ward, where they are spreading rapidly, are not conceived on an empirical basis, but are firmly rooted in scientific disciplines and processes of reasoning just as the practices are in other branches of medicine.

A Period of Striking Developments

My own thirty years of anæsthesia has corresponded with the most exciting period of development of this branch of medicine. The most striking of the many changes has been in common with the general change in the methodology of medical science: the interest in, and the clear need to obtain measurement of, objective phenomena in terms of some unit, rather than to rely on what has long been called "clinical impression" or what my colleagues in the U.S.A. call "hunch."

The anæsthetist uses a wide range of drugs. Hypnotics, anæsthetics, analgesics, ganglionic blockers, vasopressors, relaxants, are but a few. He needs to know the effects of these both on healthy people and on those already suffering from various diseases, and how these effects are modified by variations in the physiological environment, and by the administration of other drugs given at the same time. It is not

sufficient for him to know these things in general terms. He must also be quantitative, and the measurement of drug effect in anæsthesia is one of the major growing points in that field.

In 1949, the first synthetic curare-like relaxant was produced — Flaxedil or gallamine. For perhaps the first time in the case of relaxants the methods of the experimental pharmacologist were applied to human volunteers, and the voluntary contractions of certain muscles was not just observed qualitatively, but measured even if in crude units.

Studies Currently in Progress

Straddling the fields of pharmacology and physiology are the studies now going on of the manner and extent with which anæsthetics are taken up into the body from the lungs and distributed throughout the various tissues. Anæsthetic vapours are inhaled into the alveoli, pass through the alveolar membrane into the blood stream, and are distributed throughout the body to the various tissues and organs. This process depends on inherent vital mechanisms such as the ventilation, the permeability of the alveolar membrane, the blood supply through the lungs, the blood supply through each particular organ, and the physical and biochemical nature of those organs in which the anæsthetic produces its special effects. In addition to those vital mechanisms, and perhaps even more important, is the effect of certain physical characteristics of the vapour itself.

Those processes are undergoing study not only because we want to understand how and why anæsthetics produce the effects they do, but to tell the synthetic chemist and his pharmacological colleagues that we can begin to draw a blueprint for the physical nature of the inhalation anæsthetics of the future, and also to predict the effect of the anæsthetics now coming from the laboratory. The anæsthetist wants an inhalation anæsthesia rapidly, which can be controlled to maintain a desired state of anæsthesia at any point between consciousness and death with ease, and with which this level can be varied with flexibility, and from which recovery to full normal life is measured in minutes rather than hours. All those objectives are not yet capable of attainment, but we at least know the physical and some of the chemical properties which give them the virtues I have mentioned.

The tissues of the body can be roughly divided into the watery ones like the blood and the brain, which are much involved with the induction and recovery process, and the fatty tissues like the subcutaneous and other fat depôts which have much less influence on those processes. The speed

with which the tension of the anæsthetic in the watery tissues of the blood and brain come into equilibrium with the inspired tension, and the quantity of anæsthetic needed for this process, depends on the solubility of the anæsthetic in blood. The greater the solubility the more time and the greater the quantity of an anæsthetic which will be needed for this process. On the other hand, the quantity needed and the time taken to saturate the fat depôts will depend on the solubility of the anæsthetic in fat. The more soluble the anæsthetic in fat, the more will be deposited in the fat and if anæsthesia has gone on for a long time the recovery period will be prolonged by the release of this fat-stored anæsthesia into the blood stream.

Those processes are clearly highly complex and their understanding is gradually increasing through laborious laboratory experiments involving many measurements and analyses. A speeding up of this process took place when the physicist in my department, W. W. Mapleson, Ph.D., constructed an electric analogue computer. This instrument simulates the physical characteristics of vapours and the body compartments by electric components and values so that at any rate in an idealised manner, the kinetics of anæsthetic distribution and excretion can be studied. Some of the results, which are being confirmed, show how the arterial tension and close behind it the tension in the brain, rises when fixed concentrations of various anæsthetics are inhaled. With the poorly blood-soluble agents like nitrous oxide and cyclopropane the brain tension very nearly reaches inspired tension in a few minutes. This time is very much longer—hours or days—in the case of the more blood-soluble ones like ether or methoxyflurane. The prolonged period needed for equilibrium between inspired and brain tension in the case of such anæsthetics does not necessarily imply a long induction period, because the inspired tension can be increased within limits.

Recovery from Anæsthesia

Let us turn to recovery from anæsthesia for a moment. Here again the analogue computer reveals much enlightening and instructive information. Fat solubility plays a part in providing a reservoir of anæsthetic draining into the blood stream throughout recovery. The duration of the anæsthesia is clearly important as this determines how saturated the fat depôts are. In the case of halothane, for anæsthesia of up to about one to two hours, moderate recovery is hardly affected by the duration of the anæsthesia. This is in sharp contrast with ether. Even with longer operations it is only complete

recovery from halothane which is dependent on the duration of the anaesthetic. This is due to its low blood solubility.

When recovery curves of ether and methoxyflurane are compared the effect of the high blood solubility of both these substances is seen. For operations of up to a few hours' duration, the recovery curves are rising steeply and duration of recovery is very dependent on the duration of administration. In the case of all these anaesthetics the effect of their solubility in fat only becomes apparent after very long operations — perhaps twelve or more hours' duration, so that this is hardly within the clinical range.

Let me turn for a moment to the physiological field. I need hardly tell you to what an enormous extent the treatment of respiratory insufficiency has been altered by the application of intermittent positive pressure ventilation of the lungs, a method first developed by anaesthetists for the treatment of deliberate or inadvertent respiratory arrest during anaesthesia. Introduced during the 1939-45 war, artificial ventilation of the lungs during anaesthesia has reached the point at which the majority of patients, whatever their anaesthetic or operation, are ventilated to some extent artificially during anaesthesia. Now, the method has jumped the fence into the field of general medicine, and whether our patient suffers from respiratory poliomyelitis, tetanus or respiratory insufficiency due to the many other causes, the outlook is dramatically altered for the better if their ventilatory processes can be assisted or taken over by their medical attendant.

During automatic ventilation, the ability to quantitate the various respiratory and circulatory parameters has strikingly altered the anaesthetist's understanding of this procedure, and has greatly raised the standard of care of the patient through major surgery which is generally the reason for artificial ventilation.

Side-effects Now Understood

The undesirable side effects of artificial ventilation are now widely understood. They principally lie first in the direction of interference with the venous return and hence the cardiac output, and secondly in the possibility of an exaggeration of an uneven distribution of gases in the lungs resulting, in effect, in an increase in the physiological dead space.

We know that the interference with the venous return during artificial ventilation is proportional to the increase in mean pressure within the chest. Lower mean pressures result from short inspiratory periods and high inspiratory flow rates, but those very characteristics may lead to an uneven distribution between the ventilation of the lungs and the perfusion of blood through them. The result is increasing retention of carbon dioxide and the shunting of blood through unaerated lung leading to hypoxia. We have to steer a course between those two extremes, but quantitative information is not yet available to indicate where the line should be drawn.

It does not profit a patient if the

operation was accomplished beautifully, if, because of the necessarily long time it took to carry out, her fat depôts were saturated with an anaesthetic injudiciously chosen, so that her recovery to consciousness was so long delayed that she died of pulmonary embolism or cerebral thrombosis in bed. Or can it be doubted that a complex mechanism like breathing can be interrupted with impunity without a good understanding of the effects of the artificial substitute which is to take its place?

Put the anaesthetic for our old lady in the hands of a technician, and however shiny the apparatus may be, then, even if she survives the operation she may go steadily downhill and die within a week of complications which really started in the operating theatre. If only the anaesthetist had possessed not only the art of anaesthesia, but a good mea-

sure of the intellectual and scientific part as well, her life might have been ensured and she might have lived to a ripe old age. I need hardly say that in Britain, where anaesthesia is highly developed and where the complex procedures involved in modern anaesthesia are carried out only by highly trained doctors, those things are well understood and guarded against. Anyone here who may have to undergo surgery can rest assured that they will receive expert anaesthesia.

I hope I have given you an inkling of the exciting and rapid extension that is taking place in the comprehension of anaesthetic processes. With every push at the frontier a few more lives are saved in everyday surgery, and a little more hope is given to those who previously would have been condemned to early mortality.

EARLY CONFERENCE SCENES



ATTENDING CHURCH SERVICE: A group of pharmacists who attended the special service at St. John's Church pause to face a C. & D. photographer.



Miss F. A. Thornton, Mr. B. J. Windram, Mr. and Mrs. P. Crees, all from Birmingham, being received by local committee members Messrs. J. R. Jones and W. R. Pomeroy and committee members.

□ **BRITISH PHARMACEUTICAL CONFERENCE CARDIFF 1965** □

FIRST PROFESSIONAL SESSION

The Pharmacy as a Centre of Health Information

By ALLEN ALDINGTON, M.P.S.

HISTORY shows that the pharmacist has long been called upon to provide information and to be helpful in many ways not necessarily connected with health matters. One is reminded that in "Romeo and Juliet" it was the apothecary who arranged the escape of the young lovers and smoothed their path. And again, although the image of the pharmacist has not always been a happy one or even a true one in theatrical productions, such as "Pink String and Sealing Wax," the underlying helpfulness and desire to be of service has been evident all through.

The present-day education and training of the pharmacist gives him a pre-eminent place in that sphere, and those pharmacists who have kept abreast, by postgraduate study, of modern developments in therapy are well able to discuss such matters with their contemporaries in the medical and allied professions.

Co-operation With the Prescriber

The mass of literature available from manufacturers concerning new developments, and the critical appraisal in the pharmaceutical and medical journals, will be complemented in the library of the pharmacist by copies of all official books of reference.

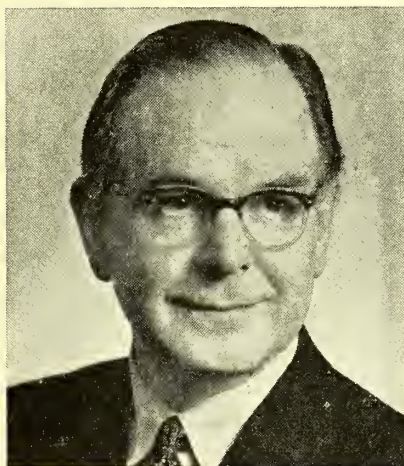
The pharmacist's rôle is not limited to the provision of such information, for he is also concerned with the presentation of the preparation of choice in the most suitable and acceptable dosage form. I am convinced that the future will see the pharmacist co-operating more and more with the doctor in the selection of the proper treatment after diagnosis. Information imparted prior to the writing of the prescription is often more readily accepted than if raised by a query after the presentation of the prescription for dispensing. This presupposes a close relationship between the two professions locally and, if that does not exist, the pharmacist should try to develop it, for it is certainly in the interest of the patient.

The recent Office of Health Economics publication entitled "The Pharmacist in Society" surveyed the historical evolution of the profession of pharmacy, and when itemising the many services undertaken by the pharmacist, the author said:

THE pharmacist plays a very important part in disseminating the necessary information about both old and new medicines. He is able to encourage their careful use and at the same time discourage their unwise administration and misuse. Although the latter is a more sensational task, and one which attracts more attention, it is the former which is more needed and can do more to improve the health of the nation.

I am sure that most pharmacists will agree with that and do their utmost to carry it into real effect. The author went on to say:

THE pharmacist who is able to spend much of his time in contact with the public can



Mr. Allen Aldington, M.P.S.

play an important part in the health education of the community. Such education can encourage people to avoid many health hazards, such as smoking or over-eating; it can advise people with early symptoms of possibly serious disease to seek medical attention; and it can encourage people to make wide use of the broad range of health services—and to avoid their misuse. In this last area—especially as it concerns the use of medicines—the pharmacist may have more opportunities than anyone else to educate the public.

In discussing the future of the pharmacist the author said:

THE more customers coming onto the premises to make a purchase, the more will be able to benefit from the professional advice available on health matters. The more who seek to take advantage of this advice, the more potential customers will come into the establishment. . . . It would be appropriate for such pharmacies to be located close to group medical practices when these exist. This would not only be convenient for the patients but would also facilitate regular consultation between the medical and pharmaceutical practitioners.

Particularly in the cities and large towns, where the surgeries are curtailed at weekends and a deputising service takes over, it is surprising how many of the public do not know of the services available to them in case of emergency—sudden illness in particular. Often they are unaware that emergencies can always be dealt with in the general practitioner services, whether they are at home or outside their own locality. In such emergencies it tends to be taken for granted that the pharmacist will have the information required.

So far, the pharmacist has acquired such knowledge locally or nationally in a piecemeal fashion, but perhaps the time has come when it should be made available to him in a more organised way. It may be objected that the pharmacist just does not have the time to provide such an extended service. Indeed, the amount of free service provided at present may be something of a burden. Such an outlook is understandable, but short-sighted, and it is often the busy man who can always find time to provide a worth-while service. How then should such a service be organised? Let us first look at similar schemes abroad and decide whether they have any pattern which would be acceptable in Britain.

French Pharmacists' Action

As long ago as 1959, French pharmacists created a "Pharmacists' sub-committee for health and social education" and, since its formation, various educational posters and other literature promoting health education campaigns sponsored by the French Ministry of Health and some sectional agencies have been distributed. The committee also conducts postgraduate health educational courses for the 15,000 dispensing pharmacists of France which, a French pharmacist has claimed, ensure that the pharmacist is capable of answering all questions concerning health posed by members of the public.

A glance at the type of information available through the French service convinces me that that claim is not an idle one. The documents issued are very varied and comprehensive under the following headings: Veterinary, agricultural, fungæ, nutrition and diets, optical, hearing, orthopaedics (including belts, corsets, etc.), dermatology, biology, (water, urine, blood, etc.), homeopathy, pharmacy practice (laws, preparations, stock-keeping, etc.), window display, local organisation, advice on all local services, health education (vaccination, child welfare, etc.), toxicology, new products.

In Italy, some literature on health matters is available from the pharmacy, and is supplemented in suitable cases by conferences—either pharmaceutical, or jointly with medical practitioners, and by radio or television programmes devoted to specific subjects.

In Scandinavian countries it is regarded as axiomatic that the pharmacy should be used for the dissemination of health information.

I would appear that in Czechoslovakia, during the five-year university training at the Komensky University in Bratislava, the problems associated with the dissemination of health information

are studied. All modern methods are used to inform the students, and through them—after graduation—the public. Posters and leaflets are employed, as well as film shows and radio programmes on suitable subjects. Pharmacists are encouraged by the Ministry of Health to give advice to patients concerning the treatments prescribed, not only on methods of use, but on diets and the results to be expected from the treatments, and also warnings on the misuse of the medicaments supplied. Leaflets are available to help in such work. The windows of the central pharmacies are used for displays of suitable material to draw attention to the local social services.

What American Pharmacists Found

In the United States of America, during 1963-64, the American Pharmaceutical Association, in co-operation with the U.S. Public Health Services, used a research organisation to determine the public attitude towards the pharmacist as a source of health information and the pharmacy as a centre for health education. I am grateful to George B. Griffenhagen (director of the A.Ph.A.'s communications division) who was controller of the experiment, for the very comprehensive survey of it which he has given me.

During the experiment, a selection of 360 pharmacies throughout the country was provided with a floor-stand with health information pamphlets for free issue. Those were changed monthly for a six-month period. From two-thirds of the pharmacies, a cross-section of customers, numbering just over 1,000, was selected and interviewed the month before the scheme commenced, and a similar number, but a separate sample, was interviewed after the six-month period. Over four million health brochures were distributed during the study period. The following were among the conclusions to emerge from the experiment:

The programme was well received by medical practitioners, nurses, dentists and others in the community.

The younger and more educated members of the public were most likely to see the floor-stand. The older people needed to have their attention drawn to it.

The number of people who would be likely to speak to the pharmacist on health matters increased, and there was a marked rise in the number who said that they had a "great deal" of confidence in what the pharmacist had told them on consultation.

The display rack was successful in catching the attention of a considerable number of patrons, but the active co-operation of the pharmacist and his staff could have made the project even more successful in some cases.

The favourable effect of the programme included an improved image of the pharmacy, and recognition of the rôle of the pharmacist in this sphere.

It is obvious that the participating pharmacist increased his knowledge and his personal prestige locally, his awareness of health matters, and therefore, his value as a member of the health team.

The success of the experiment has encouraged the American Pharmaceutical Association to make the stands—in an improved form—and the comprehensive service available to all its members, and they have been asked to contribute the sum of 144 dollars towards



CHAT OVER TEA: Professor J. M. Rowson (Conference treasurer) talks things over with Dr. G. E. Foster (a past-chairman).

the cost of the provision of the service. Thus, the A.Ph.A. will be in the forefront of this type of health work, and probably we can benefit from its experience.

What is the position in Britain? Investigation shows that there is a vast amount of information available from many sources. Some pharmacists take part in issuing some of this material and in showing posters, usually during special campaigns. However, there is no real unification of effort. There is the excellent series of *Family Doctor* books which are sold, through pharmacies only, at 1s. per copy. I believe that there is room for a wider distribution than is possible through the less-than-one-third of the retail pharmacies which stock and sell them at present.

Also in the category of books for sale are the manufacturers' "baby books." Those books carry advertisements, for it would not be possible to finance their production without them. Some pharmacists might find that a drawback. Some pharmacists sell the *Family Doctor*, but others complain that the advertising detracts from it.

The Central Council for Health Education and the Scottish Council for Health Information, which are financed and supported by local health authorities, issue literature and posters for specific schemes.

The Royal Society of Health, through its committee for Health Education, supports the Central Council in its work. The British Dental Association has sponsored schemes, or has co-operated in the sponsorship of dental health material, and in Scotland a special campaign on that subject emanated from the Department of Home and Health.

There is special material available from the associations concerned with the care of diabetics, epileptics, the blind, the deaf and dumb, and others, but it is usually issued direct to the people concerned—although pharmacy might well be able to help in such cases. Many of the projects have had some support from pharmacists in the past, but a greater effort of organisation is required if pharmacists are to develop their full potential in this matter.

Attitude to Advertisements

There is one other facet of the work of the pharmacist which I think should be the subject of discussion at this session. That is, the need for his critical approach to advertisements for medicines in the lay Press, and on radio and television. Exaggerated claims should be

borne in mind when sales are made and advice sought. It should also be remembered that a display in a pharmacy of a medicinal product carries with it the personal cachet of the pharmacist, and thus it behoves him to be especially careful in choosing products for such attention. The criteria should be that the pharmacist considers that the product is one which he can recommend as being suitable for the purpose for which it is designed, that the claims made for it are justifiable, that he has confidence that it is a high quality product, and that the price is reasonable.

In my view the time is now ripe for an organised service of information both to and through the pharmacist. But there are certain criteria which must first be satisfied and if I ask the questions, you can, and I hope will, supply the answers:

Will the pharmacist devote some of his time to studying literature to keep himself abreast of all modern developments in health education, and will he purchase a course of instruction?

Is the pharmacist prepared to devote even more of his time to develop a project designed to provide a better health information service for the members of the public through his pharmacy?

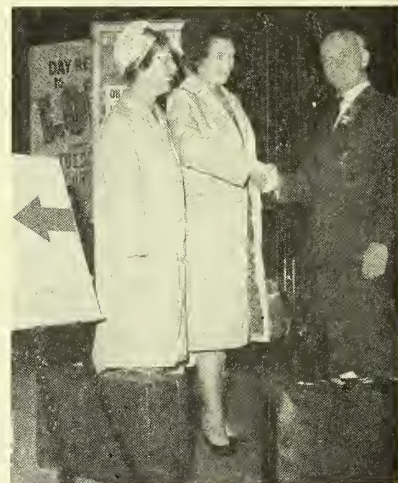
Is the pharmacist willing to devote some of his valuable space for the display of selected material?

What is the best form of display?

Would the pharmacist be prepared to pay for a showstand, and an organised service of literature on an annual basis?

Personally, I believe that there are advantages in the public interest, and that it is in the best interest of pharmacy that such a project should be undertaken. It would increase the prestige of the pharmacist in his local community, and would be a public relations operation of the finest type. I suggest that, if most of our members participated in the scheme, the cost, relative to the great value that would accrue to the pharmacist and through him to his customers, would be negligible.

To conclude, I would appeal for a very careful consideration of the subject. I believe that the pharmacist has an even bigger part to play in the health education field than he has undertaken in the past.



FROM OVER THE BORDERS: Mr. H. E. Williams (a member of the local committee) receives Miss I. K. Morton and Miss J. Fleming on their arrival from Glasgow.



The CHEMIST AND DRUGGIST

For Retailer, Wholesaler and Manufacturer

ESTABLISHED 1859

Published weekly at

28 Essex Street, Strand, London, W.C.2

TELEPHONE: CENTRAL 6565

Pharmacopœias in the Future

"DRUGS are introduced on high authority and supported by expressions of clinical confidence, they flourish for a time and then sink into a position of relative unimportance and finally pass almost completely out of use." It is remarkable that those words should have been spoken in 1934, before the golden age of the proprietary pharmaceutical speciality. The speaker was Dr. C. H. Hampshire, in his address of the British Pharmaceutical Conference in that year.

Today, thirty-one years later, pharmacopœias are again the subject of a Conference chairman's address and appropriately by Dr. Hampshire's successor as secretary of the British Pharmacopœia Commission, Mr. T. C. Denston. In the interval there have been a number of developments, particularly in the range of authority of pharmacopœias, and they seem to point in one direction.

The pace of change has, perhaps, not been so great as might have been expected. Mr. Denston points out in his paper that fewer than twenty national pharmacopœias are currently in active course of preparation or revision. Many others have not been regularly revised and replaced by up-to-date editions.

The more progressive developments have been the compilation of a Nordic Pharmacopœia official since April in Denmark, Finland, Iceland, Norway and Sweden—and the start of work on a proposed European Pharmacopœia that is intended to become binding on eight Governments, among them Great Britain. To that work, it is worth mentioning an important contribution is being made by an ex-president of the Pharmaceutical Society of Great Britain (Mr. H. S. Grainger) in his new permanent post at Strasbourg.

In Britain since the B.P., 1963, was prepared there has been a reorientation of attitudes towards the assessment of safety and efficacy and quality-control of pharmaceutical preparations. There has also been increasing concern on the subject at the international level and, as Mr. Denston states, "all good new drugs are likely to be international in the sense that they will be distributed throughout many countries. The official specifications for them should therefore be elaborated with a view to international acceptance."

There is already in existence, of course, an International Pharmacopœia, and a second edition is in course of preparation. The case for it was never better put than by Dr. Hampshire, to whose determination and industry the first edition is, indeed, a monument. He said in 1934:

"For reasons similar to those which led in this country to the demand for a British Pharmacopœia, there has arisen from time to time a desire for the unification of the standards for drugs and of the strengths and formulas of preparations through the medium of an International Pharmacopœia. The advantages of such uniformity, particularly but by no means exclusively on the Continent of Europe, are obvious. Differences in national standards for widely used materials are a hindrance to the spread of medical knowledge, an inconvenience to pharmacists who have to dispense prescriptions brought from various countries, and a source of trouble and possibly of danger to travellers, who may experience delay in receiving medicines which have to be specially made or procured."

However, as Mr. Denston stresses, the International Pharmacopœia differs from the Nordic and European in not being intended to have the legal authority in any of the member States of the World Health Organisation that the Nordic will have in Scandinavia and the European in the eight member countries it will serve. The very existence of the International Pharmacopœia may be regarded as an acknowledgment that a universally authoritative pharmacopœia is the ultimate ideal. Realisation of that ideal can but be seen as a distant dream. The political forces making—in Europe—for pharmacopœias authoritative over wider areas are offset by still intensifying nationalism in the emergent countries in other parts of the world, each of which is capable of insisting on having its own new pharmacopœia. Eventually, of course, the logic of the situation must take effect, as it did in the British Isles, where there were for far too long three pharmacopœias [those of London, Edinburgh and Dublin]. As Dr. Hampshire pointed out in 1934, "the existence of three standard works side by side, all having similar authority and prescribing differing formulas for the same drugs, gave rise eventually to representations regarding difficulties and confusion in dispensing," and finally to the Medical Act of 1858 and creation of the British Pharmacopœia, which is still, therefore, as an institution little more than a century old. Despite the quickened pace of modern times, the Universal Pharmacopœia is still a long way off.

Trend of the Science Papers

CONTRIBUTIONS to the science sessions at this year's British Pharmaceutical Conference continue to run at a high numerical level (thirty-one). But what of their content?

The papers again reflect the diversity of the disciplines that together make up the mould in which each pharmacist is cast, but it is questionable whether many of the papers will have much meaning for the graduate who has been in practice for some time unless he has become, by further study, a chemist-pharmacist, pharmacologist-pharmacist, bacteriologist-pharmacist, or whatever. That is not to say that papers of a specialist nature ought not to be presented at the Conference—indeed, such contributions add to its standing and promote a very necessary exchange of ideas between pharmacists and members of other professions who are attracted to its meetings. Nevertheless, it would be pleasing to pharmacists in general to see at least a few papers that were capable of being readily understood by the "rank-and-file" pharmacist (for pharmacists fairly so-called form the bulk of the Conference membership) and papers, moreover, that would be both of practical value to him.

The trend away from general-interest papers is, perhaps, an indication of the trend among a higher proportion of pharmacists now graduating from the schools of pharmacy, whose research tends to be more fundamental in approach than similar work carried on in industry and outside the academic world generally. It is noteworthy that, in 1964 and 1963, seven pharmaceutical companies were presenting papers, and in 1962 eight. In the current year only four companies have brought forward the results of their pharmaceutical research. In each of those years 1962-64, also, a hospital pharmaceutical department was associated with one of the papers presented. Not so in 1965. The type of paper that is conspicuously missing this year is that which is exemplified in some of the titles of papers presented at previous Conference meetings, such as "Stability of Solutions of Isoprenaline (School of Pharmacy and University College Hospital, 1962); "Sterilisation of Colchicine Injection" (Department of Pharmaceutical Sciences, 1963); and "Influences of Vehicles on Skin Penetration" (Royal Free Hospital, London, 1964).

Probably the most notable absentee from the list of contributors this year is the Society's own Department of Pharmaceutical Sciences. That department gives stalwart service to the Society's members in the research it carries out, and its findings are always of practical application. Admittedly the Department publishes an annual report, and also presents occasional papers in the Society's journal, but would not the Conference be opportune for the announcement of some of the more detailed research? Its presentation in that way would enable a large number of pharmacists, from every branch of the profession, to become aware that they could contribute to the scientific discussions from their own practical experience, as well as having, all of them, something to learn.

We cannot, however, let any comment on the science sessions pass without felicitous mention of yet another paper from Dr. T. E. Wallis, who reports this year on the seed structure of *Datura sanguinea* R. and P. It is something to marvel at that the passing of time has left no obvious mark on the clarity of eye or steadiness of hands that have been instrumental in leading generations of pharmacy students along the paths of pharmacognosy.

Also deserving of commendation is a paper from Dublin presented by Mr. O'Connor, possibly the first but we hope the first of many science papers from Eire to be presented at meetings of the Conference. The work was based on the use of peat bog after the peat had been cut from it for use in local power stations and therefore may prove to have an economic as well as a scientific interest.

Current Thinking on Shop Hours

ALTHOUGH the Government makes it quite clear that it is not in any sense committed to the proposals set out in the recently published White Paper on retail trading hours (see p. 269), and that the proposals are put forward as a basis for discussion for future legislation, it appears to consider a number of specific points about the proposed legislation basic and essential. Retail distribution is regarded as a key sector of the economy in which, "if rising living standards are to be achieved, there will need to be, as in other sectors of

the economy, greater efficiency in the use of resources and, in particular, greater productivity."

Background to the White Paper is the questionnaire sent by the Home Secretary and Secretary of State for Scotland to interested organisations inviting their views on amending the law relating to weekday trading, and an inquiry by the Departmental Committee on the Law on Sunday Observances, under Lord Crathorne.

The new suggested permitted hours of opening from 6 a.m. to 7 p.m. on weekdays, with the option to stay open up to 9 p.m. once a week, appear at first sight a retrograde step, reminiscent of earlier days before the 1939-45 war, but the situation at the moment is that many shops may remain open until 8 p.m., though few do so after 6.30 or 7 p.m. The Union of Shop Distributive and Allied Workers, commenting on the proposals, has been quick to suggest that a possible thirteen-hour trading day is excessive. The union recommends a general closing hour of 6 p.m. with the late hour of 7 p.m. as more reasonable and as bringing the law "into line with what in most places is current practice."

A fundamental change in policy suggested by the Government is to allow, whenever possible, a shop that is permitted to be open to sell any merchandise it normally handles. That would overcome the anomalous position under which razor blades may be sold at certain times for cutting corns but not for shaving.

Another new proposal is that a local authority should be empowered, on the application of a shopkeeper, to issue a "certificate of variation" allowing trading when it would otherwise be prohibited. It could prescribe different hours for different periods of the year. That would avoid the need for complicated local-authority exemption orders in respect of tourist and holiday resorts. As an alternative to the application for a certificate of variation, a group of traders would be allowed to apply to a local authority for the registration of a rota scheme, under which the shopkeepers would provide a public service at times during which trading would normally be prohibited. As examples, the White Paper cited current arrangements by groups of pharmacists. Pharmacists also receive special mention in the White Paper for their services under the National Health Service Act. In order to avoid conflict between hours-of-service schemes and local-authority-registered rota schemes, it would be made clear that such proposals would not make it an offence for the pharmacist to trade at a time authorised by an hours-of-service scheme.

Most shopkeepers will approve the intention to bring all forms of retail trading under control, not only in shops but also from stalls, barrows, and vehicles, and to require door-to-door salesmen to observe the general closing hours.

One suggestion that must prove of special interest to pharmacists is the proposal to continue and extend the exemption in the existing law that no trader commits an offence in effecting a sale during a prohibited time if he can prove it was an isolated one to meet the immediate needs of a customer in illness or emergency. The trader would have the onus of proving that he had reason to believe the supply was necessary to alleviate suffering.

So far the proposals in the White Paper are in the nature of talking points. No doubt every interest in the distributive industry will be pressing for safeguards to be included in any future legislation.

Overseas Trade in Pharmaceuticals

THE value of the United Kingdom exports of pharmaceutical products during July was, at £5,376,000, the second highest monthly total so far recorded this year. The total for division 54 of the Overseas Trade Accounts (H.M. Stationery Office, price 30s.), which includes surgical dressings as well as pharmaceutical products, was £5,894,000, and brought the total for the seven months of the year to a little over £39 millions, against £34.5 millions in the corresponding period of 1954.

Australia, with purchases at £429,000 in July, moved back to her once usual position as Britain's largest customer. France, surprisingly top purchaser during

June, dropped to second place, with purchases of £350,000. Next came the Irish Republic, whose purchases totalled £303,000, followed closely by New Zealand with £301,000. Sales to countries in the European Economic Community totalled £905,000 and to the European Free Trade Association countries (including Finland) £556,000.

Imports of pharmaceuticals during July were again at a high level, reaching nearly £1 million. More than one-third of the imports came from Western Germany and almost one-fifth from the United States.

Items contributing to the July exports and imports are given in the table below, together with a number of bulk pharmaceuticals, chemicals not included in division 54.

EXPORTS	£'000		£'000		£'000
Vitamins in bulk	397	Organotherapeutic glands, etc.*		Sulphonamides in bulk	98
" products	77	" " in bulk	13	" tablets	50
Antibiotics		" products	11	" other products	19
Penicillin in bulk	124	Sera and vaccines	173	Proprietary medicines	1,802
" injections	97	Aspirin in bulk	45	Unclassified medicines	905
" tablets, ointments, etc.	312	" products	65	*Not elsewhere specified.	
other antibiotics in bulk	138	Antihistamine products	55	IMPORTS	£'000
" products	396	Antipaludics products	53	Vitamins	59
Alkaloids in bulk	78	Barbiturates in bulk	54	Antibiotics	101
" products	42	" products	28	Alkaloids	72
Hormones in bulk	168	Medicated confectionery	108	Glycosides, glands, sera, vaccines	24
" products	158	Ointments, liniments*	83	Proprietary and veterinary medicines	471
Glycosides	22	Surgical dressings	518	All other	256

"OPEN SHOP"

An unscripted commentary on the special problems of the pharmacist in general practice

E. C. TENNER

IT is remarkable how easily things can be done if somebody other than ourselves is going to have to do them.

At the recent British Medical Association's annual representative meeting at Swansea a certain Dr. Dawson, in putting forward a motion dealing with the labelling of medicines, said that he wanted the National Formulary Committee to "invent a simple symbol that will be accepted by the medical profession and the pharmacists to save a lot of extra writing." As far as I am aware he did not say who was to be spared the extra writing, but one can reasonably suppose that he was meaning himself and his fellow doctors. If the matter rested at that stage I would be in complete agreement with him, for I am all for sparing everyone from extra and unnecessary chores. Unfortunately that is not the whole of the story, for it is that the good doctor intended to use his simple symbol to signify that he wished me or one of my fellow pharmacists to undertake the extra writing on his behalf, and with that I cannot and will not agree. There may, in a few special circumstances, be an adequate reason why the name of the drug should appear on the label of the container, and it would seem to me that those cases are adequately covered by the present agreement that, if the prescriber wishes that, he should indicate his wish by writing on the prescription (for example: "Sig. The Drinamyl Tablets," etc.). That is quite fair, and if he is prepared to do the extra writing, I am prepared to do the same. However, I am afraid that we are going to be sold down the river in this matter, and that our own representatives on the Joint Committee dealing with it are going abjectly to agree to the official use of the detestable letters "N.P." on prescriptions. We ought all to take note that, if this is agreed, it will become part of our terms of service, and failure to comply will be regarded as a breach of them, landing us into trouble. What a state of affairs when our own representatives cannot prevent us from being used officially as the unpaid clerical assistants of another profession! One would not,

perhaps, object so violently if it were to be demonstrated that any likely beneficial result would be in any way relative to the effort required to attain it. To assess that effort I have just done a simple calculation. The word Drinamyl would seem to be a reasonable one to use, and I find that it takes me four seconds to write it. Assuming that 200 million prescriptions are dispensed in a year, it will require the full-time efforts of over 100 pharmacists merely to write the drug name on each prescription. Is that a reasonable thing to have thrust upon us? Can we, as a profession, afford this waste of time any more than the doctors? May I suggest that you, reader, should take this matter up with your nearest Member of Council or of the National Pharmaceutical Union Executive before it is too late. Since writing the above I have been shown a prescription for an extemporaneous stomach mixture marked "N.P.", and of course it necessitated the writing-out of the whole prescription on an extra label. Surely by examples such as this the doctors condemn any case they may have been able to make for the introduction of this name-labelling practice. Here no unidentifiable white tablet that might have to be quickly traced. It was a proof of what is intended by this whole obnoxious campaign—the use of the pharmacist as an unpaid record-keeper.

Another Anomaly

Last month, in my comments on truss fitting, I mentioned the question of a travelling allowance for domiciliary cases. Looking through my Hospital Service Contract Form for next year I find that it contains a new clause allowing such a fee if the hospital doctor requests the fitter to visit the patient at his home. It would appear that we are shortly to have another anomaly in that, if I visit a patient at the request of the hospital, I will be paid an extra fee for so doing, but that when he requires a replacement on an EC10 form from his own doctor there will be no extra fee. What about it, Central N.H.S. Committee?

*A History of the***BRITISH PHARMACEUTICAL
CONFERENCE***by E. H. Shields***The
years
1901
and
1902**

THE Dublin Conference of 1901 began auspiciously with Mr. G. Claridge Druce, M.A., F.L.S., in Court dress and wearing his chain of office as mayor of Oxford, welcoming his guests in the Science and Art Museum. The scene was cordial and animated in the extreme, we are told, and a candid onlooker may well have thought that a pharmacist's lot must be happy indeed if it led to so much gaiety. On the next day, however, the president himself did his best to remove any such impression. The greater part of the opening address was a series of comparisons between conditions in 1800 and in 1900. There had been wonderful developments in communications and scientific pursuits—photography, chemistry, biology, botany, bacteriology—all leading to an explosive "What on earth has this to do with pharmacy?" Apparently it was intended to take the hearers' minds into higher, more congenial realms. When the speaker did come down into the arena in the final quarter of an hour to answer his own question, the gloom descended. Instead of progress there was retrogression. The compulsory examination system, which had seemed so promising, had given large numbers of candidates a modicum of science whilst the more practical part of pharmacy had been pushed to the wall. They had a "symbiotic union of qualified dummies, content to be ruled over by the real business-men who might know little or nothing of pharmacy." In such a union the organisms "do little good to themselves and infinite harm to us"—a complete contrast to the picture presented by Mr. G. F. Schacht in that very place, Dublin, twenty-three years previously. Signs of pharmaceutical decadence were increasingly obvious in the "patent" medicines, the still more insidious proprietaries—so often, alas! ordered on prescriptions—and, worst of all, in company pharmacy. Recent experience had shown that the legislature, "which had called us into being, did nothing in the way of protection." Pharmacists had to rely upon themselves, "upon the fact that when a man works for himself he has the hardest of taskmasters." Strangely enough Mr. Druce had to confess that the best

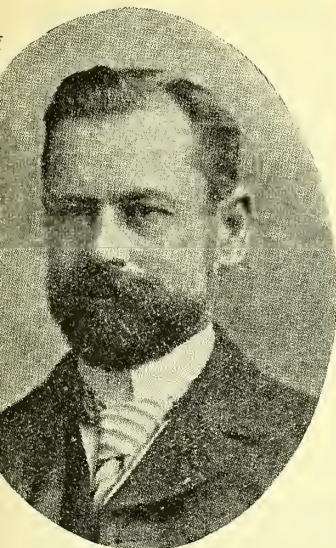
work in contemporary pharmacy was being done on the wholesale side.

In submitting the Conference financial report, Mr. J. C. Umney hoped that it was turning the corner, with an income from subscriptions greater by £36 than any in recent years. The adverse balance had been reduced to £20, and about £14 had been received too late for inclusion in the accounts. The executive committee of the Conference noted the continued success of the annual meetings, but regretted the unsatisfactory membership figures. Also regrettable was the resignation of Mr. Louis Siebold from the editorship of the Year Book after twenty-seven years' good service. Mr. J. O. Braithwaite was appointed to take his place. The idea of a Conference research worker had been found to be impracticable. Instead, there was to be a special research fund, from which grants-in-aid could be allocated. Mr. W. A. H. Naylor (senior honorary secretary for the previous fifteen years) resigned and was succeeded by his colleague (Mr. F. Ransom), with Mr. E. Saville Peck as assistant.

Of the papers that followed the report, the most interesting dealt with standardisation. Introducing the subject, Mr. W. H. Martin advocated complete freedom of choice as between active principles and galenical preparations, the quality of the latter being guaranteed by much more precise tests for identity and chemical assay of the crude drug and the utmost care in processing. Mr. H. Wippell Gadd described his experiences when using current methods, and suggested standards for various drugs of which the active principles were unknown or could not be readily isolated. Dr. Attfield summarised the position in a single memorable sentence: "Chemical pharmacy is advancing, galenical pharmacy slowly passing away." Other speakers were much less forthright. There was a natural tendency to push the uncomfortable spectre into a far distant future (the 1960's, perhaps?). Mr. J. Rutherford Hill suggested that Dr. Attfield was already living in a remote future, whereas ordinary pharmacists had to deal with existing conditions.

Members of the Dundee
Conference, 1902.





Mr. W. A. H. Naylor, who retired as Senior Secretary after the 1902 Conference meeting. Right: Mr. C. Claridge Druce (Conference Chairman in 1901 and 1902). Right: An irreverent picture of some of the V.I.P.'s of the Dublin meeting in 1901.



Miss Bridget Rose Clinton added charm to the customary all-male cast with a sparkling paper, "Concerning Cascara Sagrada," in which she quoted Herbert Spencer, provided some practical formulas for elixirs, and routed those purists who insisted on *Rhamnus purshianus* just because De Candolle had done so. She "much preferred the feminine gender," and time has justified her choice: "purshiana" it is. The indefatigable Farr and Wright contributed useful notes on sweet nitre and concentrated infusions or liquors, and Dr. Atfield was again accused of living in the future when he asked for concentrates of 1 in 10 instead of 1 in 8. Mr. Wright had also sent in laboratory notes on his own account. Dr. F. B. Power had devoted much time and immense learning to the chemical elucidation of *Robinia pseudacacia* bark, Mr. Pérèdes co-operating with his characteristically beautiful line drawings.

In the Apostolic Succession

Mr. Claridge Druce was re-elected to the chair for the following year, and when the Conference met at Dundee he was much happier in his opening address on Scottish botanists and the Scottish flora. With subjects so near to his heart he showed that he was indeed in the apostolic succession of Professor Bentley, who had dealt with pharmaceutical aspects of botany at Dundee thirty-five years previously. Many of Mr. Druce's holidays had been spent in Scotland tramping the moors, climbing the mountains, apparently thinking nothing of twenty-mile walks in search of "specimens" (though one hesitates to use the word). To him, plants remained as living, essential parts of the landscape. He was the field botanist *par excellence*, rejoicing in "coming face to face with Nature in her ever-changing moods, realising her enormous powers of accommodation to environment." How did he ever find time to attain his eminence in such a demanding subject as systematic botany whilst taking part in local government, running a business in Oxford High Street, and grumbling so comprehensively at his chosen profession?

The executive committee of the Conference reported on familiar lines, including the all-too-familiar list of departed stalwarts (Martindale, Groves, Louis Siebold). Mr. J. C. Umney, presenting the financial statement, said that the position could be transformed if only he could get in all the arrears. The new research fund stood at £47 5s.

Dr. C. R. Marshall (professor of materia medica and therapeutics at the University of St. Andrews), made proposals for pharmaceutical education that must have seemed revolutionary to many in his audience. He recommended much more science prior to practical training. A youth was much more receptive at the end of his school days than after three or four years of apprenticeship, and that precious time should be used to the best advantage. Two years at the most could then suffice for training in business routine. If a university course leading to a degree could be instituted, so much the better, but let it be for the B.Sc. degree pure and simple. He did not like the look of B.Sc. (Pharm.). The numerous critics of that Marshall plan were afraid that young people so highly educated would be too big for their boots—no dusting of bottles, no washing of measures for them! Furthermore, conditions in England were very different from those in Scotland! Dr. Marshall retorted that he knew all about that, and wanted to improve those conditions, having experienced them in person whilst working for a time in a West Riding shop. It was only by a fluke (he called it a mischance) that he was not a pharmacist himself.

A paper by Mr. John Thomson, Dundee, gave examples of galenicals that he was old-fashioned enough to make on the premises. They included distilled and aromatic waters, liquid extracts, official glycerins, concentrated infusions, liquors and various tinctures. Retail chemists present found his cost figures interesting, but they were challenged from the wholesale side and omitted from the records. The president illustrated the position by his story of a lady friend who thought that the home farm was profitable but whose husband remarked that she paid no rent and he paid the wages! Mr. Thomson remained unperturbed and unrepentant. He actually *liked* being a pharmacist.

The Midas Touch

A pleasant feature of the closing session was a presentation to Mr. W. A. H. Naylor (the retiring senior secretary) of a writing desk, water-colour pictures and an illuminated address signed by 230 subscribers. It was decided to return to Bristol for the following year, with Mr. T. H. W. Idris in the chair. Mr. Claridge Druce prophesied a prosperous meeting, because everything Mr. Idris touched "turned to gold."

□ **BRITISH PHARMACEUTICAL CONFERENCE CARDIFF 1965** □

Conference Banquet

THE Conference banquet was held in the Sophia Gardens Pavilion on Tuesday night when nearly 800 members and guests were present.

Lady members found at their table places two pieces of traditional Welsh copper lustre were made by the Criegiau Pottery, West Cardiff, as gifts from the Conference local committee.

Music was provided during the meal by a quintet from the Cardiff College of Music and Drama, and before the meal was over national groups were heard to be in good voice.

The menu provided a problem to the majority present in that it was in Welsh.

achievements at the School of Pharmacy, and as vice-principal of the College. Mr. Bloomfield then mentioned unusual forms of Conference entertainment. In 1964, during the Edinburgh Conference excursion, there had been a bank robbery, but the Cardiff members had excelled themselves by setting fire to the headquarters hotel! He wondered if that was not a reprisal for happenings at a certain meeting in London.

In her response to the toast, the lord mayor (Alderman Mrs. M. C. Bryant, J.P.), was glad the Conference members had had the opportunity to see a few of the beauties that the people of Car-

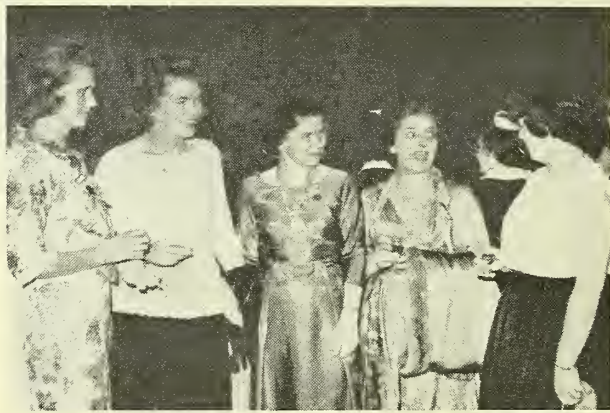
make that considerable contribution towards training in pharmacy.

Replying to the toast Mr. T. C. DENSTON commented that Sir Cennydd had found the Conference was no infant yet showed no symptoms of senility. The programme for the week was impressive evidence of that.

The toast "the University of Wales and Guests" was proposed by Miss M. A. BURR (a member of Council of the Pharmaceutical Society), who believed she had been allocated the toast because of her Welsh ancestry. In reply, the provost of the Welsh National School of Medicine (Dr. A. Trevor Jones, M.D., F.R.C.P., D.P.H.),



BANQUET RECEPTION: The chairman (Mr. T. C. Denston) welcomes Mr. A. Shaw (assistant secretary, Association of the British Pharmaceutical Industry) at the Sophia Gardens Pavilion on Tuesday evening.



AT THE BANQUET: A group with not a Saxon among them—Mrs. B. R. Smith, Dublin; Mrs. W. Dalton, Dublin; Miss D. I. L. Locker, Edinburgh; Mrs. Lawford Gower, Cardiff, and Mrs. Brian Howell, Cardiff.

Celtic Origins Recalled

Mr. J. C. Bloomfield (Conference president and president of the Pharmaceutical Society), proposing the toast, "The City of Cardiff," said that, before entering the room, members perhaps should have been searched for transistor radio sets. He was sorry he could not give the result of the *Winstone v. Saldivar* world feather-weight boxing match "but he understood that in her reply the lord mayor would provide a running commentary. To those present who had had to cross the Border to Wales the words of welcome were reminders of the Celtic origin of a country of unparalleled beauty, which accounted for the poetry and music for which the Welsh were famous. "We envy them the way they cling to their costumes, traditions and language." On entering Cardiff for the first time one could not fail to be impressed by the grandeur of the Civic Centre. It said much for the foresight of the Marquess of Bute in the terms of his bequest to the city. Pharmaceutical education, said Mr. Bloomfield, had been provided in Cardiff since 1919, and since 1926 it had been carried on in association with the University of Wales. He hoped that, with the granting of university status to the Welsh College of Advanced Technology, the relationships between the two institutions would continue in the spirit of co-operation. He congratulated Mr. Vernon Lloyd on his

diff saw every day. She had been reading about the Society and its beginnings 100 years ago, and was amazed at the strides that had been made through devoted research. "With synthetics you have been able to do so much better than nature has done." Great strides in treatment had been achieved "all because of the service and interest of men and women like yourselves." "For such highly professional people you are one of the happiest groups I have ever come in contact with . . . the Conference is more than welcome in the City and would be welcomed back at any time as we have so enjoyed your company."

Wales and Pharmaceutical Education

The toast to the British Pharmaceutical Conference was proposed by SIR CENNYDD TRAHERNE, T.D., M.P. He had noted, he said, that since 1923 the Conference and the Society had been extremely close to one another. Even if not one entity, they served one another as the closest of partners to the great benefit of both. Though he was retiring this year he had enjoyed the honour of being the president of the Welsh College of Advanced Technology, and felt that he had in some measure been connected with pharmacy in that capacity. He also had seen the school of pharmacy flourish under its head, Mr. Vernon Lloyd. All in Wales were proud to

said that not all the guests were members of the University of Wales but all were united in accepting the hospitality of the Conference.

Royal Society of Health

It is usual for the pharmaceutical subjects group of the Royal Society of Health to hold a meeting sometime during the Conference week. The completeness of the programme organised by the Cardiff local committee precluded an evening meeting for the R.S.H. An innovation this year was that the council of the Royal Society of Health, through the committee of its pharmaceutical subjects group, had invited members of the Council of the Pharmaceutical Society, the Conference Executive and local officers to a pre-lunch cocktail party. Appropriately enough it followed Tuesday's professional session on "The Pharmacy as a Centre of Health Information" with its paper by Mr. Aldington (a member of council and of the health education group committee of the R.S.H.).

About fifty members accepted the invitation to meet members of the council of the R.S.H., including Professor A. M. Cook, who is also a member of the Conference Executive. It is hoped that the meeting will be the first of many meetings of members of the councils of the two Societies, cementing the relationships between them.



Head-table party at the banquet.

Civic Reception at City Hall

The first dress occasion of the Conference meeting was held on Monday evening, when the lord mayor (Alderman Mrs. Miriam C. Bryant, J.P.), accompanied by her daughter, the lady mayoress, received the Conference at the City Hall on behalf of the Cardiff City Council. The lord mayor, welcoming the guests, said she had been informed by her deputy, who in her unavoidable absence had formally opened the Conference, of its size and importance. She, her deputy and the lady mayoress welcomed the Conference, and hoped members' stay in the capital city of Wales would be a happy one.

While guests were waiting to be received they were able to enjoy a harp recital given by Mrs. Glenys Evans (daughter of the Cardiff surgeon Mr. Meurig Williams, M.Ch.). Mrs. Evans wore traditional Welsh costume. The latter part of the evening was given over to dancing.

Wye Valley Tour

A beautiful sunny morning encouraged the ladies who had booked for the Wye Valley tour to look forward to an enjoyable excursion through this pleasant countryside. They were not disappointed. It is also suspected that the better weather lured not a few gentlemen away from the more serious side of the Conference in favour of the open-air life! The tour, lasting all day, was in effect a main Conference excursion in miniature, about half a dozen coaches being needed for it. The coaches passed through the once quiet villages of St. Mellons and Castleton to Newport, a town thriving, not least because of the huge steelworks completed in recent years at nearby Llanwern. On the left of the old town bridge were seen the ruins of Newport Castle which, first erected as a wooden structure in the first quarter of the twelfth century, was later replaced by the present stone structure in the fourteenth and fifteenth centuries. Looking right down-river visitors could see the new road bridge, and in the distance the older transporter bridge. The tour

continued through Langstone and Penhow, and then by-passed Caerwent, which is the Roman city of Venta Silurum, their only civil town established in Wales. The coaches went on to St. Pierre Country Club for coffee. St. Pierre takes its name from the original home in France of the Norman family who took possession of the territory, and the early Norman church still stands near the house. The estate belonged to the Lewis family for about 500 years (until 1920), which financed (in part) the prolonged campaign which Henry V waged

against the French and which culminated in the siege at Harfleur and the victory at Agincourt. As security for the money borrowed, the Crown Jewels of England spent over twenty years locked in the St. Pierre strongroom, until redeemed by the youthful Henry VI. The journey continued through the Wye Valley to Tintern where lunch was taken. Visitors were able to admire the Abbey, one of the most beautiful ruins in Britain. After lunch the excursion continued up the Wye Valley through Llandogo and crossed the river at Bigsweir, a single-span bridge joining Monmouthshire to Gloucestershire, to the county town of Monmouth on the rivers Wye and Monnow. In the time of Henry VIII, the town was still surrounded by a wall with four gates, of which the Monnow gate remains.

From Monmouth, the tour left the main road to travel through the country lanes to Trellech and Devauden, thence to St. Arvans. This route gave an opportunity to admire the rolling Monmouthshire countryside. Again across country, the visitors came to Usk, a small town famous for its trout and salmon fishing.

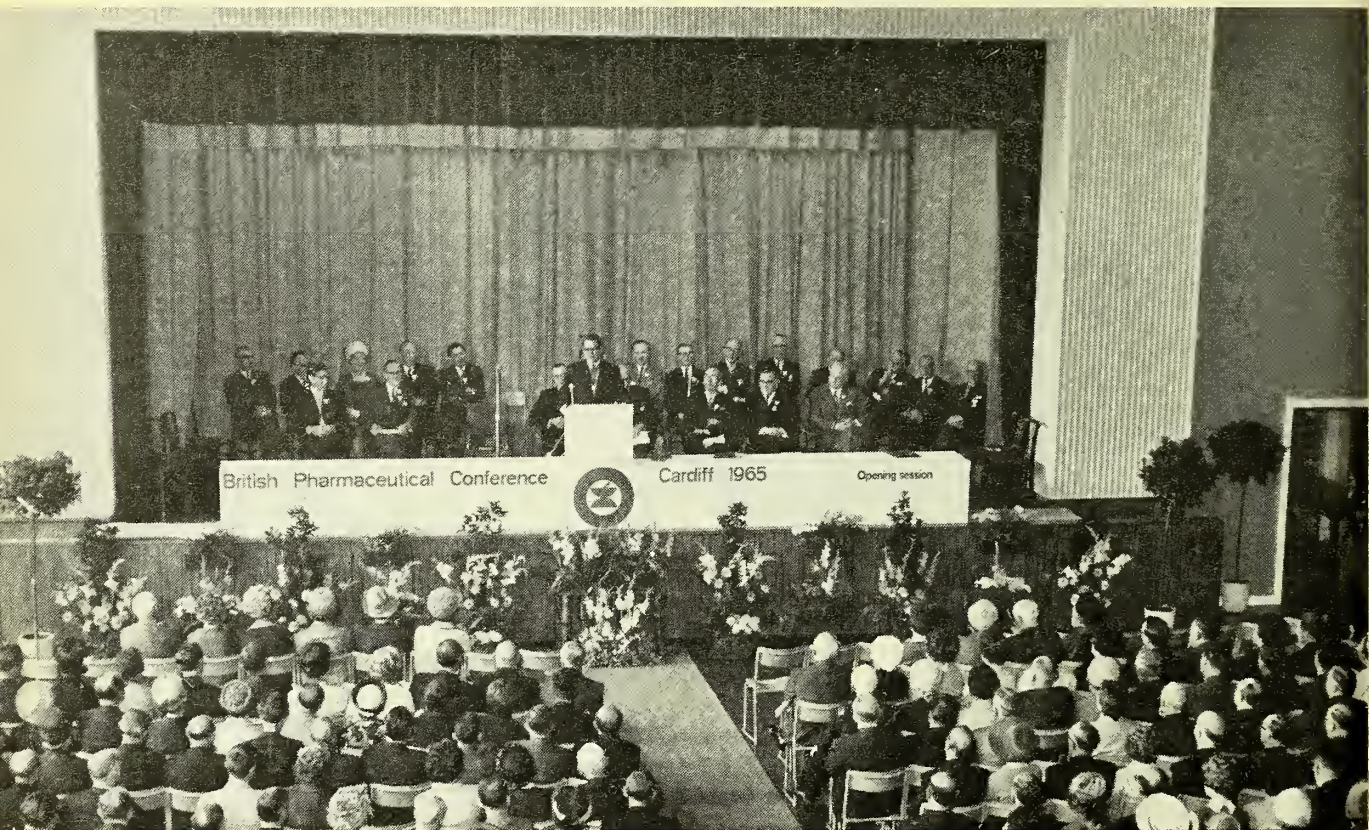
Homeward bound, the tour passed through Caerleon, on the site of the great Roman fortress of Isca.

Tablet Identification Competition

Samples of twenty different tablets were displayed in a cabinet near the W.C.A.T. dining hall. Prizes were offered for the first correct entry received from retail, hospital or "other" pharmacists.



CIVIC RECEPTION: Mr. James Coleman (secretary, Pharmaceutical Society of Ireland) and Mrs. Coleman are received by the lord mayor of Cardiff (Mrs. Miriam C. Bryant) at the City Hall.





CONFERENCE PICTURES

1 & 2. Opening session.
3. Mrs. J. Edwards,
Mrs. E. F. Hersant,
Mrs. T. C. Denston,
Mrs. K. A. Lees, Mrs.
J. C. Bloomfield, and
Dr. F. Hartley.
4. Mrs. J. G. Coleman,
Dublin, with Mr. J. P.
and Mrs. O'Donnell
discuss the day's events
5. Messrs. T. Coutts,
Aberdeen; J. G. Pitt,
Loughborough; and J.
Johansson, Stockholm.
6. Mrs. and Mr. J.
Edwards, Mrs. H.
Whitton Davies and
Mr. L. Livsey (chair-
man of local Branch).
7. Mr. D. C. Evans,
Mrs. A. J. Rawcliffe,
Rev. Father G. Inglis;
Mrs. Estelle Leigh,
and Mr. and Mrs. T. P.
Martin, after Mass at
St. David's Cathedral.
8. Conference members
in the grounds of Car-
diff Castle: Mrs. K. A.
Lees, Mrs. E. F.
Hersant, Mrs. T. A.
Morgan, Mrs. E. Week-
ay, Mrs. R. E. James,
Mrs. T. C. Denston,
Mrs. G. Mitchell and
Mrs. K. C. James.
9. A section of the
party at Cardiff Castle.
10. At Messrs. David
Morgan's hairdressing
salon a few of the
ladies watch Mr. An-
thony Taylor working
on model Miss Pat
Montague.

4, 5, 6



8



9



10



□ **BRITISH PHARMACEUTICAL CONFERENCE CARDIFE 1965** □

Science Sessions

SCIENCE session A on Monday afternoon, Mr. Denston in the chair, was attended by about 120 Conference members. The papers were all concerned in one way or another with the subject of

Bacteriology

PAPERS 1 and 2 were taken together, the first being presented by PROFESSOR A. M. COOK and the second by DR. M. R. W. BROWN.

SPORE PAPERS OF REPRODUCIBLE RESISTANCE: A method of making

A. M. COOK and M. R. W. BROWN
(School of pharmacy, University of London)

THE authors describe a method of making papers impregnated with *Bacillus stearothermophilus* spores. Their work disclosed that papers impregnated by the method so that each paper contained about 10^7 spores were of satisfactorily high and reproducible resistance to steam at different temperatures.

SPORE PAPERS: Effect of storage on the heat resistance of

A. M. COOK and M. R. W. BROWN
(School of pharmacy, University of London)

PAPERS impregnated with 10^4 *Bacillus stearothermophilus* spores in water and subsequently stored on the bench can lose heat resistance and viability, the authors have shown. Loss of viability is accelerated with storage over silica gel. Papers containing more than about 10^6 spores were found to retain significant heat resistance over long periods. The pH of the broth significantly affected recovery from heated spore papers.

DR. H. S. BEAN, London, agreed that *B. stearothermophilus* was a useful organism for assessing resistance to wet heat but he maintained that it had no value for dry heat. Had other organisms been tried? DR. BROWN replied that *stearothermophilus* had been used exclusively, but he was less certain than Dr. Bean about dry heat—such a finding might be due to a defective method of recovery. DR. BEAN admitted he had failed to find with *B. subtilis* the resistance found with *stearothermophilus*. Had a particular strain been used for dry-heat testing? PROFESSOR COOK said no particular strain had been looked for. The main concern had been with wet heat resistance. DR. BEAN emphasised that his concern was that, in testing for sterilisation of items such as syringes by dry heat, another spore-paper organism would be necessary. MR. G. SYKES, Nottingham, asked whether the method was reliable enough to be put forward for the production of spore papers. New light was being shed on the functions of spores. In the present instance—the first adverse condition they met (being dried over silica)—caused the organisms to die. PROFESSOR COOK replied that, to assume that the bacterium went into the spore state to protect

itself was to give the power to forecast the adverse condition. The reason for sporulation was as yet unknown. DR. BROWN, answering Mr. Sykes's question on the effect of sporulation time on spore resistance, said the main point was not the resistance itself, but its reproductibility. To that point MR. SYKES later replied that it was no good having readily reproducible resistance if the sterilisation time was only 2 minutes at 115°C . DR. R. C. KAYE, Leeds, was told that the work had been started because the authors had found commercially available ("to us") spore papers not to be reliable.

Presenting his first paper to a British Pharmaceutical Conference, DR. G. RICHARDSON read his contribution on:—

VIABILITY OF SPORES of some *Bacillus* species

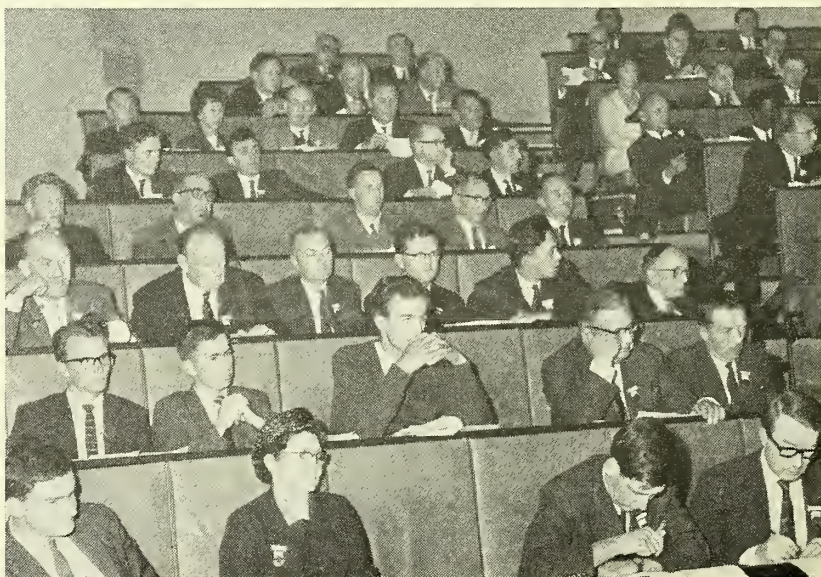
G. RICHARDSON
(School of pharmacy, College of Technology, Portsmouth)

THE percentage of spores of *Bacillus subtilis* capable of giving rise to macrocolonies ("viability") has been determined. Under optimum conditions (heat-activation and inclusion of dextrose in the counting medium) about 30 per cent. of spores formed colonies. That figure appeared to increase to about 70 per cent. on prolonged cold storage (0-10°). The viability of spores decreased with increase in the manganese content of the sporulation medium. Spores of four other species of *Bacillus* examined were not heat-activatable and were unaffected by the dextrose content of the counting medium. They showed viabilities of 40-75 per cent.

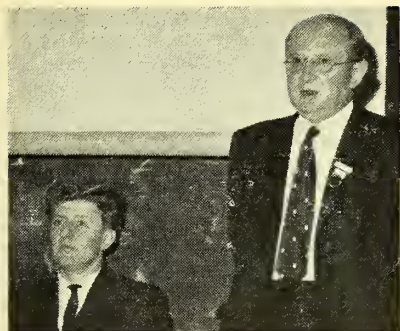


Dr. E. F. Hersant (joint general secretary of the Conference) and Mr. T. C. Denston (Conference chairman) listening to a paper at the first Science Session.

MR. M. R. W. BROWN, Bristol, commented that workers at the School of Pharmacy, University of London, had used the same strain as Mr. Richardson, had counted in the same way, and yet had obtained 80-90 per cent. of the total count-giving colonies. When the spores were heated at 100°C . they had gained no activation. He also spoke in detail on the author's attempt to separate spores that required heat activation from those that did not. Using the author's own figures, he showed that the results obtained from spores requiring heat activation were what might have been expected if the first incubation had caused "heat sensitisation." DR. RICHARDSON, answering the first comment, said that the higher viability had been obtained on 10-month-old suspensions, which was in accordance with his own findings. PROFESSOR COOK was surprised at the increased viability on storage. The London suspension had in fact decreased in viability on further storage. MR. SYKES believed an answer might be that the ultimate resistance of any organism to treatment depended upon the way it was grown initially and recovered. Though conditions appeared



Conference members at the first Science Session.



Professor A. M. Cook, London, and Dr. M. R. W. Brown, Bristol, authors of a paper presented at the first Science Session (group A).

the same, the preparation of a spore suspension in London or Portsmouth might be different.

Another "first" was the paper presented by MR. R. J. GILBERT:—

YEAST CELLS: Effect of, in the heating medium on the heat resistance of *Bacillus stearothermophilus* spores

A. M. COOK and R. J. GILBERT
(Department of Pharmaceutics, school of pharmacy, University of London)

THE heat resistance of bacterial spores is greatly influenced by the nature of the medium in which the spores are heated. To investigate that observation the authors have used yeast cells as a source of organic matter because of their uniform particulate size. Time-survivor curves for spores heated in water and in a killed yeast suspension both showed a characteristic period of heat activation followed by an exponential death rate. The exponential part of the curve for spores heated in the presence of yeast was less steep than that of the control curve indicating that the yeast cells afford some protection from heat to the spores. Experiments are continuing to examine the effect quantitatively and qualitatively.

DR. BROWN said it would have seemed right to have heated a yeast suspension, spun down the yeast cells, and tried the effects of the supernatant liquid. Chemicals would then have gone into the medium. PROFESSOR COOK pointed out that the paper was of a preliminary nature and that in fact they had since gone even further than DR. BROWN had suggested. MR. GILBERT expanded the point by saying that the yeast cells had been disintegrated and spun down, but the protective effect was still found. He went on to suggest to another questioner the likelihood that some yeast cells lysed to provide a protein solution. There was some evidence that protein solutions could protect cells from heat. MR. B. E. WINSLEY suggested that some chemical products released during lysis, rather than protein material, might be intermediate metabolites of the cell. If products of enzyme activity in the cells could thus be replaced from outside, there might be a protective effect. PROFESSOR COOK said the effort had been made to cover the point by incorporating yeast extract in the recovery medium, but there had been no increase in recovery. It was therefore not a replacement, as had been suggested.

MR. B. E. WINSLEY then presented:—
PHENOL AND BENZOIC ACID:
Influence of pH upon the antifungal activity of

B. E. WINSLEY and V. WALTERS
(Department of pharmacy, University of Ife, Ibadan Branch, Ibadan, Nigeria)

IT is known that if an antimicrobial agent is more active in the unionised form, then alteration in the pH of a reaction mixture will cause changes in the percentage ionisation and hence influence the activity of the toxic agent. The authors report on that effect for the action of phenol and benzoic acid on *Aspergillus niger* spores. Their results indicate that unionised molecules are the predominantly active form. (Penetration to or beyond the cell membrane has been shown by others to be more easily achieved by neutral molecules.)

DR. BEAN asked whether the authors had done any work on the uptake of the compounds by the cell. He suggested that the changes in activity observed were due to a change in the partition coefficients. In general, increasing the pH would increase the water solubility of the compounds and decrease the solubility in fatty compounds such as the cell wall biophase of the bacterium, which was known to contain lipoprotein. Thus the effect could have been expected. In reply, MR. WINSLEY pointed out that, the work having been done in Nigeria, the apparatus needed had not been available to carry out work such as the questioner had suggested. He agreed that liposolubility was a most important consideration in penetration by the compound. Dr. Bean had raised a further point regarding the need to consider three phases (biophase, aqueous and oily) in considering paraffin emulsions (mentioned by the author in his introduction). MR. WINSLEY replied that it was necessary to consider only where the compound ended up. He suggested that fungus flourished in the aqueous phase so that, if the growth could be depressed in that phase, progress was being made towards good formulation. A SPEAKER from Bristol said that earlier workers had produced a graph to predict activities from pK_a and pH values. The present results fitted that graph, indicating that they formed just one aspect of a generalised phenomenon.

Last paper of the session was presented by MR. J. ODURO-YEBOAH.

PHENOL INACTIVATION OF A BACTERIOPHAGE: Effect of concentration and temperature on

W. R. L. BROWN, A. M. COOK and J. ODURO-YEBOAH
(School of pharmacy, University of London)

THE paper shows that the concentration of phenol affects both the rate of inactivation of phage and the shape of the survivor-time curves. The shape of the curves obtained indicates that phenol may inactivate phage in two suggested stages involving different components of the phage protein. The concentration exponent for the inactivation depends on the level of inactivation chosen. The temperature coefficient

is independent of the level of inactivation. The temperature of incubation of phenol-treated phage does not obviously affect the recovery of the phage.

MR. E. ADAMS, Portsmouth, asked whether the findings for phage, as opposed to what was seen for bacteria, might be linked with the nutritional requirements of the organisms, but PROFESSOR COOK believed it more likely to be concerned with structure. The remaining discussion centred round the mathematical interpretation of the graphs presented in the paper and possible explanations for those interpretations.

Pharmacognosy

DR. W. MITCHELL acted as chairman of session B, at which almost 100 people were present. It was the custom, said Dr. Mitchell, to greet with



Mr. K. A. Lees and Dr. William Mitchell.

a round of applause an author presenting a paper for the first time. Dr. Wallis was not in that category, but should, he thought, be given a special welcome.

Datura sanguinea R. and P., its seeds
T. E. WALLIS
(Museum of the Pharmaceutical Society of Great Britain)

THE seeds of the Peruvian plant *Datura sanguinea* R. and P. contain hyoscyne and are used in Peru as stramonium is used in Britain. Their structure is described and is compared with that of the seeds of stramonium and of *D. fastuosa* with a view to their identification either unground or in powder.

PROFESSOR J. M. ROWSON, Bradford, after commending Dr. Wallis for his paper, said it rounded off the work begun some time ago in the Pharmaceutical Society's laboratories. His question was why were there two forms of seed? DR. WALLIS said it might be because of the way the seeds were attached in the placenta. DR. G. E. FOSTER, Dartford, said the topic was not really in his field, but he wanted to know if the seeds were fertile, and whether the diagnostic features of seeds that would not germinate were similar to those that were viable. DR. WALLIS did not feel that viability was a feature. If seeds had been kept too long they would not germinate.

PROFESSOR BROWNLEE referred to reports that the Peruvians prepared from the seeds an intoxicating beverage that stupefied if taken much diluted,

but that, when strong, brought on attacks of furious excitement. The problem might concern combinations of the hyoscyne with other alkaloids.

The next was a short communication presented by MR. J. G. WOOLLEY, a "first-time" author at the sessions.

BIOSYNTHESIS of tigloyl esters in *Datura*

W. C. EVANS and J. G. WOOLLEY
(Department of pharmacy, University of Nottingham)

TIGLIC acid esters have been isolated from various *Datura* species but the origin of the tiglic acid moiety does not appear to have been investigated. Various theories have been put forward and, using labelled carbon, the authors of the communication have obtained results that suggest that isoleucine is a more immediate precursor of the tigloyl moiety than either acetate or propionate.

PROFESSOR FAIRBAIRN, London, asked if the author had thought why the plant should break down isoleucine, and DR. FOSTER wanted to know if Mr. Woolley could tell of any enzymes that could carry out the reactions he had postulated. MR. WOOLLEY said that none had been isolated.

DR. F. FISH, Glasgow, reminded the speaker that plants grown in vermiculite provided a more fibrous root system. Had the normal proportion of tigloyl esters been changed by growth under artificial conditions? MR. WOOLLEY said the point was one for investigation.

DR. MITCHELL said they were in some difficulties concerning the next short communication. The authors had not contacted the Executive at the Conference. The paper was taken as read.

EGYPTIAN *Plantago* SPECIES: Phytochemical studies of (alkaloids)

Z. F. AHMED, A. M. RIZK and F. M. HAMMOUDA

(Medicinal Plants and Crude Drugs Research Unit, National Research Centre, Dokki, Cairo)

THE alkaloidal content of eight species of *Plantago* common in Egypt has been examined. Column chromatography on silica-gel has yielded five crystalline fractions.

Both DR. FISH and PROFESSOR FAIRBAIRN criticised the contribution for lacking some essential details.

The tenth paper was presented by DR. T. J. BETTS.

CARVONE in the developing fruits of *Anethum graveolens* L. and *Carum carvi* L.

T. J. BETTS
(Department of pharmacognosy, school of pharmacy, University of London)

THE carvone content of the developing fruits of *Anethum graveolens* L. (dill) and *Carum carvi* L. (caraway) has been determined spectrophotometrically over three seasons. Three or four weeks after pollination, carvone in the fruits attains a level of 11-20 mg. per 100 caraway fruits, or 4-9 mg. per 100 dill fruits. Variations in the carvone content of the essential oils distilled from these fruits are probably due to variable quantities of limonene.

MR. G. M. BURNETT, Sudbury, believed that dillapiole was sometimes found in Indian dill: it was reported to be toxic. MR. BETTS replied that the vast majority of dill now commercially available was Indian, and there appeared to be no reports of toxic effects from its use.

When PROFESSOR ROWSON asked if Dr. Bett's assay method was suitable for use to evaluate material, the author said he would not go so far as that. The method had given rise to some difficulties, but seemed to be sensitive.

Paper 11 was given by another "first timer," MR. T. M. JEFFERIES.

FUNGAL GROWTH on the roots of *Rauwolfia oxyphylla* Stapf.: Some effects of

T. M. JEFFERIES, W. C. EVANS and G. E. TREASE

(School of pharmacy, Bristol College of Science and Technology and the department of pharmacy, University of Nottingham)

IN some samples of the dried roots of *Rauwolfia oxyphylla* Stapf., a species indigenous to the swampy forests of Uganda, the xylem fibres isolated by Schulze maceration possess abnormal characters, which appeared to be associated with certain micro-fungi. The authors have examined that association and describe three stages in the digestion of the fibre-wall.

It was a short communication and the author showed a number of excellent slides from photographs, the quality of which brought a commendation from DR. MITCHELL.

DR. FOSTER wanted to know if the microfungi had any effects on other constituents and was told that no detailed investigations had been carried out, though there appeared to be fewer alkaloids in the mouldy samples.

The final paper in session B was from Dublin.

ESSENTIAL OIL of *Mentha piperita*: Effects of growth conditions on the yield and quality of

C. S. O'CONNOR
(Department of pharmacognosy, College of Pharmacy, Dublin, and department of chemistry, University of Dublin)

THE results of a factorial experiment designed to study the effects of nitrogen, phosphorus and potassium, alone and in combination on the yield of green herb, and on the yield and com-

position of the essential oil of *Mentha piperita* are reported. The experiment was made on reclaimed peatbog in Ireland. The main conclusions were: When nitrogen is added in high concentration there is a significant increase in the yield of essential oil and a decrease in the menthol content of the oil. Superphosphate also reduces the percentage menthol content of the oil. Mixtures of all three fertilisers result in a reduction in the percentage oil yield. The exceptionally low menthofuran content of all the samples is unusual.

MR. BURNETT suggested that the yield of herb per acre was of little commercial significance: it was the yield of oil that was important. The method of drying might explain some low yields. MR. O'CONNOR pointed out that the method adopted had been forced upon them. They had not been able to deal with the crop in any other way. Dr. Fish remarked that it was very nice to see the name Ireland in a paper on pharmacognosy. He regarded the various yields quoted by the authors as being "perfectly ordinary" figures. The literature gave figures for menthol that were higher than occurred in his experience. Would it not be a commercial possibility to grow *Mentha piperita* for its oil yield? If not, was it not possible to grow it as a culinary herb? MR. O'CONNOR said that later work as yet unpublished indicated that exceptional plant growth could be obtained by increasing the application of nitrogen. He felt there was a possibility of developing the production of culinary herb but not of producing the oil.

Chemistry

TUESDAY morning science session, with Mr. Denston in the chair, was devoted to five papers, of which the first three were presented by authors making their first contributions to a Conference. MR. B. M. JONES led off with a paper on

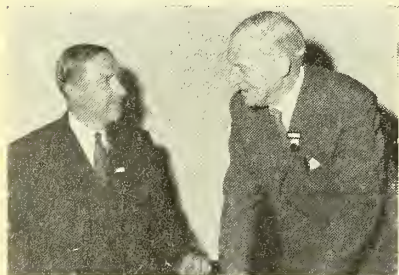
SOME NITROFURANS IN URINE: Comparative assays of

B. M. JONES, R. J. M. RATCLIFFE and S. G. E. STEVENS

(Smith, Kline & French Laboratories, Ltd.)

POLAROGRAPHIC and microbiological methods for the determination of nitrofurantoin and of *N*-(5-nitro-2-furfurylideneamino)-2-imidazoline-one (NF 246) in urine are described. In these the limit of detection is 1 µg/ml by the polarographic and 5 µg/ml by a cup plate microbiological technique. No preliminary separation of the drugs is required. The polarographic method is to be preferred, since it is a more sensitive assay and results can be obtained within an hour of receiving the sample.

DR. G. E. FOSTER, Dartford, who asked what would happen in the microbiological assay if antibiotics were present, was told that antibiotics would, of course, affect the results and the work had been carried out in normal subjects only. Polarographic assay gave the same results whether the urine was heated, or not. On whether NF246 was excreted in a conjugated form, PROFES-



Professor J. W. Fairbairn with Mr. T. Coutts after the first Science Session (B Group).

SOR A. H. BECKETT, London, said his experience was that all nitrofurans were reduced biologically to the corresponding aminofurans, some of which were reasonably stable. He doubted whether the authors were dealing with the conjugated nitro compound. He also asked whether the authors had measured the volume and pH of the urine in each collection. The amount excreted could be affected by pH, and the amino compound would be more affected by that factor than would the parent nitro-furan. MR. S. G. E. STEVENS, Croydon, acknowledged some importance in Professor Beckett's point, but emphasised that the paper was analytical, and simply indicated a way to show quickly that an adequate dosage was being administered in hospital practice.

Second paper was presented by MR. J. C. DEAVIN.

ANALYSIS OF METHISAZONE J. C. DEAVIN and D. H. MITCHELL (Wellcome Chemical Works)

THE physical and chemical properties of methisazone (1-methylindoline-2,3-dione 3-thiosemicarbazone) are described. Iodimetric titration is suggested as being the most convenient method of assay. Each molecule of methisazone reacts with eight atoms of iodine and the mechanism of this reaction is discussed. Methisazone was examined for impurities by thin-layer chromatography and details are given of the technique employed. Reference is made to the change in light absorption of methisazone solutions when exposed to light.

MR. S. G. E. STEVENS was concerned that production batches had given assays of 97.5 per cent. Was the nature of the other 2.5 per cent. known? DR. FOSTER pointed out that the paper said that batches "had seldom given . . . less than 97.5 per cent." PROFESSOR BECKETT, who asked if the syn and anti isomers had been isolated by working in the dark, was told that they had, and that physical data was now being obtained for them. During his introduction to the paper MR. DEAVIN had described how freshly ground material developed "whiskers" on storage and that prompted MR. K. A. LEES, Greenford, to ask whether crystals had, from the pharmacist's point of view, to be used shortly after grinding. He was told that growth usually began after one week, continued for a month, then slowed. The material was used within a few days. When Mr. Deavin added that the growth was more rapid in aqueous suspension than in the dry state, Mr. Lees asked whether the crystals had been examined for traces of solvent. He was informed that the factors involved were not all known. MR. C. A. JOHNSON, London, suggested that Mr. Stevens' "2½ per cent." might be explained if the load used in thin-layer chromatography allowed a level of impurity that was just about the detection level. If the load were less there would be a smaller error. MR. DEAVIN replied that even with a 50 µgm. load only a trace of N-methylisatin was found to be present. Another questioner was told that complexing with metals had been tried but was not satisfactory.



SCIENCE QUESTIONERS: Mr. G. Sykes, Nottingham, Dr. F. Fish, Glasgow, and Mr. G. M. Burnett, Sudbury.

MR. R. A. SAVIDGE presented:—

LIMIT TEST for *p*-chloroacetanilide and other impurities in paracetamol and phenacetin using thin-layer chromatography

R. A. SAVIDGE and J. S. WRAGG
(Analytical development group, standards department, Boots Pure Drug Co., Ltd.)

A THIN-layer chromatography procedure is described suitable as a limit test for *p*-chloroacetanilide in paracetamol and phenacetin. The sample is chromatographed on silica gel together with a standard and detection is by irradiation with ultraviolet light 253.7 mµ followed by examination in light of wavelength 365 mµ. The procedure may be used to limit the *p*-chloroacetanilide content of tablets containing paracetamol or phenacetin. Other possible impurities in paracetamol and phenacetin are also detected and may be limited by similar procedures.

MR. S. G. E. STEVENS, Croydon, said that other impurities might be found in paracetamol made from other starting points. He had found acetamidobenzene. No clinical work seemed to have been done to find the "real devil" among the toxic impurities—it seemed difficult to believe that it was *p*-chloroacetanilide. THE AUTHOR replied that it was only conjecture that *p*-chloroacetanilide was the culprit but that compound did produce renal damage. MR. R. I. FELIX, Liverpool, said that commercial samples of paracetamol passed the B.P. tests for impurities but had the authors any experience of other impurities that might explain why samples varied in colour. MR. SAVIDGE replied that the only impurity found in any sample examined had been one spot that they suggested was acetylated paracetamol. DR. T. D. WHITTET, London, agreed that evidence for *p*-chloroacetanilide being the causative agent was doubtful. It all stemmed from a paper which said that before the change in the usual manufacturing process, no cases of renal damage had been reported. There was, in fact, more evidence that it was the phenacetin itself that was harmful because some findings had been made with low-impurity material. MR. C. A. JOHNSON, London, remarked that the U.S. Pharmacopeia limit of 0.03 per cent. was "just about on the fringe of their analytical method." If *p*-chloroacetanilide was to be controlled then the present paper went a long

way to achieving that end. PROFESSOR BROWNLEE said that there was evidence to show that if the tests performed on phenacetin were applied to aspirin, then the same amount of damage was caused to the lining of the kidney tubules.

DR. A. F. CASY then presented his paper on:—

CONFIGURATION OF DEXTROMORAMIDE

A. F. CASY

(School of pharmacy, Chelsea College of Science and Technology)

THE author shows that dextromoramide has the same configuration as *S*-(—)-isomethadone. Since it has already been shown that dextropropoxyphene (at its 3-C centre) and (—)-phenampromid have likewise the same configuration as *S*-(—)-isomethadone, configurational identity among the more pharmacologically active enantiomorphs of analgesics containing the structural feature >NCH₂CHMe, is firmly established.

A short discussion was closed by PROFESSOR A. H. BECKETT, who said that the paper represented a warning to those who took too closely related compounds, examined changes in polarity, then assigned a configuration on the basis of that evidence alone.

Final paper of the session was presented by PROFESSOR J. B. STENLAKE, who said that the contribution formed part of a programme of work to establish a total synthesis for streptomycin and to find a structure-activity relationship for it.

DIHYDROSTREPTOMYCIN DERIVATIVES: glycosides of dihydrostreptobiosamine

G. K. J. FERGUSON, I. J. MCGILVERAY and J. B. STENLAKE
(Department of pharmacy, University of Strathclyde)

THE authors describe some glycosides of dihydrostreptobiosamine and have evaluated transglycosidation as a method of synthesising streptomycin-like compounds with the same stereochemistry as the natural antibiotic. Phenyl dihydrostreptobiosaminide and 2-bromoethyl dihydrostreptobiosaminide were found to be inactive against *Staph. aureus*, *B. subtilis*, *E. coli* and *Ps. pyocyanea tuberculosis*.

Discussion was of a technical nature and was mainly concerned with the stability of the compounds.

A White Paper on Shop Hours

FAR-REACHING PROPOSALS AND TRADE UNION COMMENTS

"THERE is an obvious need to ensure that retail distribution provides the maximum service to the community consistent with efficient use of resources and reasonable working conditions for its employees. The Government believe that these objectives can best be realised by a movement towards greater flexibility in retail trading arrangements rather than by further restriction."

That declaration of Government policy is put forward in the White Paper on "Retail Trading Hours — Suggested Provisions for Amending the Shops Act, 1950" (H.M. Stationery Office, price 1s. 6d. per copy). The White Paper deals with closing hours only, the Government believing that the conditions of employment of workers in shops and in allied trades are better dealt with separately. Emphasis is laid on the point that the Government is not in any way in any sense committed to the proposals put forward in the White Paper.

A Thirteen-hour Day

One suggestion made is that shop-opening hours should range from 6 a.m. to 7 p.m. on every day except Sunday, and that an option should be given to the trader to stay open not later than 9 p.m. on one late night each week. The trader would also have the discretion to close at 1 p.m. on an early closing day of his own choice. As a general rule shops would continue to be closed on Sundays but, where Sunday trading was permitted, the 7 p.m. closing hour would apply. The selection of 7 p.m. as being the hour at which trading should cease for the day has been made "because this is the earliest hour in existing legislation at which a local authority closing order under Section 8 of the 1950 Act can apply." An earlier hour than 7 p.m. would probably involve the local authority in an unnecessary amount of work.

The White Paper suggests that the closing hour on the late day should be fixed by the trader, who would be required to display a notice, conspicuous to customers, stating the day and time of closing on the late day. He might alter the late day or the time of closing on that day on the same conditions, and with the same frequency, as he could alter the early closing day—that is, not more frequently than once every three months.

It is pointed out that the present late day is Saturday unless fixed by the local authority on some other day. Many traders do not wish to open late, and some may wish to provide a better service to customers by operating in an area a rota of late nights. A provision on those lines is designed to allow adequate flexibility in meeting the needs of both the shop-keeper and the customer.

Nothing in any new Act would apply to retail trading in licensed premises, but its provisions would apply to trading in intoxicating liquors in premises

in respect of which a justices' offence is held, where such trading forms only a part of general trading (for example in groceries, unless access to the part of the premises dealing in intoxicating liquor can be separated from the rest of the premises).

No trader would be considered guilty of an offence of carrying on trading at a prohibited time if he could prove that the transaction was an isolated one to meet the immediate needs of a customer in a case of illness or emergency. The White Paper points out that that proposal follows the exemption in the existing law, extending it, however, to all the new provisions prohibiting trading, and placing on the trader the burden of proving that he had reason to believe that the transaction was necessary to alleviate suffering or that the goods were required in case of illness or an emergency. "It is not intended to restrict purchases to medicines; for example, aspirin and paper handkerchiefs might both be required in the case of a severe common cold. A trader would not be allowed to keep his premises open in anticipation of customers' requiring goods in case of illness, but he could admit or serve a customer at his discretion in the circumstances described above. By an emergency is implied an urgent need, not being for an illness—for example, the purchase of a tin of special baby food the supply of which had become exhausted might be an emergency."

Pharmaceutical Services

There is a special paragraph dealing with pharmaceutical services under the National Health Service Act. It states that no chemist should be deemed guilty of an offence of trading at a prohibited time, "if at that time he is required to provide a pharmaceutical service under the National Health Service Act and the hours-of-service schemes made thereunder." In order to lessen any possibility of conflict between the hours-of-service schemes prepared by Executive Councils to provide pharmaceutical services under the National Health Service, and local authorities registration of rota schemes for other aspects of trading from chemists' and similar shops under section 8, it would be made clear that the proposals did not make it an offence to trade at a time authorised by an hours-of-service scheme.

Retail trade carried on entirely by automatic machines operated by the customer without assistance from the trader or his employees would not be regarded as retail trade falling within the scope of any new Act. Generally speaking it would be the Government's intention to bring all forms of retail trading, not only in shops but also from stalls, barrows, vehicles, etc., within the scope of any new legislation. "An exception would be made in respect of automatic machines which the customer operates, generally by means of a coin, whether located inside premises, in the doorway, or on a

public footway. This exception would not apply where there was an employee in attendance in order to supervise or advise the customer in the use of the machine."

"Certificate of Variation"

It is suggested that a local authority should be empowered, on the application of any trader, to issue a "certificate of variation," valid for a specified period or until revoked, reducing the hours specified in the certificate those during which the retail trade or business might not be carried on; the local authority would have to be satisfied that the reduction in hours was necessary in the public interest and that there were adequate arrangements in force to prevent employees (if any), other than immediate relatives, from working excessive hours. The certificate could prescribe different hours for different times of the year, and could specify the premises, vehicles, etc., to which the extension related or a certificate could cover all the premises, vehicles, etc., operated by the applicant in the area. If at any time the local authority ceased to be satisfied that the reduction in hours ought to apply, it could, by giving fourteen days' notice to the trader, revoke the certificate.

It is accepted that there are places (such as in or near railway termini, coach stations, etc.) at which travellers might have special requirements. "There are small shops in residential areas where late evening shopping is a valuable community service. There are shops meeting the needs of holiday-makers and tourists. In the past these cases and many others have been covered by attempts to exempt transactions in the Schedules to the Act or by complicated local Authority exemption orders." It is considered that nation-wide exemptions and local authority orders of that type are unnecessary; "and indeed the evidence points to little use being made by traders of them." It is therefore hoped that the special cases of trading outside the standard hours "can best be met by the local authority applying its local knowledge of the requirements of the people residing in or visiting its area, not forgetting the interests of employees."

A local authority faced with, for example, a request from a large majority of traders of all kinds in a particular street or locality could issue a certificate of variation applicable to that street or area. That would meet the problem of holiday resorts and some tourist centres in which there was a definite seasonal demand for additional facilities. It could also provide for six-day trading in the central shopping centres in the major towns.

Rotas

As an alternative to an application for a local-authority certificate of variation, a group of traders could apply to the local authority for the

registration of a rota scheme, whereby they agreed to provide in rotation for the purchasing public a service at times when otherwise such trading would be prohibited.

The White Paper states that such a procedure would enable late evening opening and early closing day rotation, or trading on Sunday, perhaps for a short period in the morning, to be arranged—for example by a group of chemists' shops as is done at present in many areas. It is thought the procedure might be equally adaptable to other trades and businesses that might wish to provide an extended service to the public on a limited basis without involving each trader in excessive hours of opening. A certificate would be the authority for trading in any of the goods stocked. Generally premises would not be open for the sale of some articles but closed for others. There would be new arrangements to enable flexibility in trading hours at Christmas, New Year and before Bank Holidays.

Shop Workers' Statement

The Union of Shop, Distributive and Allied Workers has issued a statement welcoming the proposals contained in the White Paper, inasmuch as the Paper recognises the need, in the interests of the shopping public, the shopkeeper and the shop worker, to

maintain statutory control of trading hours to prevent any possibility of an unnecessary and unrestricted opening of shops to any hours. In particular, the Union "notes with appreciation" the proposal that mobile shops, barrows and stalls should be subject to the same legal obligations as other traders.

The standard hours of trading suggested in the proposals of 6 a.m. to 7 p.m., with one late night to 9 p.m. (i.e., a thirteen-hour trading day), is considered excessive, and likely, if utilised, to create hardship for shop workers, inevitably adding, by the enlargement of staff, to the costs of distribution and the incidence of higher prices, which would not be in the public interest, particularly as the White Paper indicates that the Government regards retail distribution as a key sector of the economy. The Union considers that a general closing hour of 6 p.m. (late night 7 p.m.) is more reasonable and that it would serve to bring the law into line with what is, for the most part, current practice.

While the Union "takes a broad and reasonable view" on the question of adequate shopping facilities for the public, it is not prepared to accept an extension of shopping hours, which could have the effect of lengthening the working week of shop workers and make it more difficult to secure a reduction in working hours.

LEGAL REPORTS

Infringement Suit Fails in Canada

AN action brought recently by the American Cyanamid Co. before the Canadian Exchequer Court to prevent the import and sale of Czechoslovak tetracycline into Canada has been dismissed. The American company, the judgment states, did not succeed in proving infringements of its patents by the Czechoslovak producer, who owns a number of patents for fermentative production of tetracycline in the majority of European and American countries, including Canada and the United States. The strong commercial position of SPOFA (the United Pharmaceutical Works of Czechoslovakia, whose products are exported to Canada by Chemapol) in the export of tetracycline is claimed based on considerable research work in the field of tetracycline antibiotics, resulting in a range of new inhibitors of chlorination of the tetracycline molecule, in a new productive micro-organism, in an economically advantageous method of isolating tetracycline and in a number of other discoveries theoretically as well as practically important in the manufacture of the product.

Interim Injunction Refused

No confusion was likely to arise from the use of both Butazone and Butazolidin as trade marks in the sale of phenylbutazone, according to Mr. Justice Waller, in the Vacation Court, London, on September 3. The judge dismissed an application by J. R. Geigy, A.G., Basle, Switzerland, for an interim injunction restraining Chelsea Drug and Chemical Co., Ltd., Portman Square, London, W.1, from

infringing Geigy's trade mark Butazolidin by selling, offering for sale or advertising phenylbutazone tablets under the trade mark Butazone or any other term so resembling Geigy's trade mark as to be likely to deceive or cause confusion. The judge said that Messrs. Geigy had manufactured the drug since 1963, selling it under the name Butazolidin. It was a Class 4 poison that could only be supplied by a pharmacist on the authority of a doctor's prescription. In May Chelsea Drug and Chemical Co. decided to market phenylbutazone under the name Butazone and the trade notice of their intention. They had started to market the drug in August. The drug was not on sale to the general public and the words phenylbutazone, Butazone and Butazolidin were words that would be used by doctors and pharmacists, and the judge had to consider whether, when a doctor prescribed phenylbutazone using the word Butazone there was likely to be confusion with the different brand, Butazolidin. Geigy relied solely on the evidence of the managing director of their English subsidiary who said that there was likely to be confusion and mistakes by dispensing chemists. The opposite was stated in evidence by a director of Chelsea, who was himself a doctor, who said that Chelsea's intention had been to market a cheaper drug and to distinguish it from Geigy's more expensive product. Chelsea had also put in evidence by pharmacists who said that there was no likelihood of confusion. The judge felt that the possibility of the two being confused was almost non-existent. Butazolidin having, as it did, a rather unusual end-

ing, was highly unlikely to be confused with the word Butazone. Accordingly he dismissed the application.

COMPANY NEWS

Previous year's figures in parentheses

A. KERSHAW & SONS, LTD.—(Controlled by the Rank Organisation.) Profit for year ended June 26 was £74,000 (£77,000). Dividend is held at 86 per cent.

DUNBEE-COMBEX, LTD.—Net profit, excluding Rees section, was £232,629 (£203,067), less taxation of £105,601. Dividend is 42 per cent. (35 per cent.). The chairman (Lord Westwood) reviewing the various companies within the group states that Jean Sorelle was involved in a major move from London to Peterborough where 75 per cent. of the Sorelle products are now made. The move resulted in a loss of production at the time and was reflected in the profits made in that section.

PHOTOPIA INTERNATIONAL, LTD.—Turnover for the first three months of the current year is running "satisfactorily" ahead of the same period last year, declares Mr. C. G. Strasser (chairman) in his statement with the accounts. Mr. Strasser discloses that Photopia was a "close company" because 68 per cent. of the shares were held by five participators and he has sold a sufficient number of his shares so that the statutory provision that a certain percentage of profit must be distributed, no longer applies to the company.

P. P. PAYNE & SONS, LTD.—Following the death of Mr. N. J. Booth (joint managing director), Mr. O. C. I. Spicer has been appointed deputy chairman and assistant managing director; Mr. D. W. Seston, secretary; and Mr. R. L. Swift, works manager of Haydn Road and Hucknall factories. Mr. Spicer, former financial director and company secretary, joined the company in 1953, and became a director in 1961. Mr. Seston, who has been assistant company secretary for the last five years, joined the company in 1954. Mr. Swift joined the company in 1961 as production manager for the Regal stationery division, and became group production manager for the Haydn Road factories two years later.

F. W. BERK & CO., LTD.—Subject to audit, consolidated profits after all charges but before taxation for the six months ended June 28, amounted to £502,450 (£502,770). Group sales at £7.25 millions were 5 per cent. higher than for the comparable period of 1964. With tax estimated at £177,020 (£276,130) net profit is £325,430 (£226,640). Profit margins in all but the chemicals division have narrowed slightly. Providing the level of national activity is maintained, it is expected that group sales for the second half of the year will exceed those of the first and profits for the whole year should be not less than those for 1964. An interim dividend of 3½d. per share is maintained on the capital as increased in May 1965 in order to reduce the disparity between the interim and final dividends.

BUSINESS CHANGES

YARDLEY OF LONDON, LTD., are transferring all sections of their organisation at present located at Carpenter's Road and warehouses at Watton Road, Stratford, and Forest Gate to their new factory at Miles Gray Road, Basildon, Essex (telephone: Basildon 2271), upon completion during November-December. The registered office and accounts department remains at Stratford, London, E.15.

Appointments

WILKINSON SWORD (ACTON), LTD., Southfield Road, London, W.4, have appointed Mr. R. H. Bartlett marketing director. Mr. A. Williams has been appointed marketing manager of the company's shaving division for the Far East, and Mr. J. Peterken commercial manager for the company.

REXALL DRUG CO., Castle Boulevard, Nottingham, have appointed Mr. Peter C. Barnes their sales manager for the United Kingdom and Eire. Mr. Barnes succeeds Mr. L. L. Bently who, following two years as home sales manager, is taking up an appointment with the Rexall, U.S.A., sales division.

PERSONALITIES

MR. JOHN LLOYD, B.Sc.(Pharm.), M.Sc., Ph.D., M.P.S., A.R.I.C., author of one of the papers that is being presented at the British Pharmaceutical Conference this week, graduated at Manchester University in 1958 with first-class honours in pharmacy. From 1958 to 1961 he was at the department of chemistry, Manchester University, as British Empire Cancer Campaign research student, investigating under Professor G. R. Barker the mode of action of some biologically active purines, particularly purine itself and 6-mercaptopurine. He gained his M.Sc. in 1959, and his Ph.D. in 1962. Since 1961 he has been at University College, Cardiff, first as Medical Research Council research assistant, from 1963-64 as assistant lecturer, and since 1964 as lecturer in biochemistry. In conjunction with Dr. Felix Beck, of the College's anatomy department, he has been investigating the production of congenital malformations in the young of animals injected with certain dye-stuffs, such as trypan blue and Evans blue. The department was recently awarded a grant from the Spastics Society of £2,600 a year for three years to continue the work. Mr. Lloyd has contributed about twenty research



FATHER AND SON PHARMACISTS: Mr. J. B. Lloyd, M.P.S. (group pharmacist, United Manchester Hospitals) with his son Mr. John Lloyd, B.Sc.(Pharm.), M.Sc., Ph.D., M.P.S., A.R.I.C.

publications, including two review articles.

DR. WILLIAM MITCHELL, who is chief chemist, Stafford Allen & Sons, Ltd., has been appointed technical director of Stafford Allen (New Guinea) Pty., Ltd. He has left on a prolonged visit to New Guinea to supervise the full commissioning of the pyrethrum extraction plant recently built there by the company.

OVERSEAS VISITS

MR. E. REDHEAD (Minister of State (Overseas) Board of Trade), is making his first visit to the Soviet Union to see the British contribution to the International Exhibition "Chemistry in Industry, Construction and Agriculture" being held in the Sokolniki Park, Moscow, September 11-26, and to attend the opening ceremony.

MARRIAGES

BIRD — IRVING. — At Pinner Methodist Church, on September 4, John Michael Bird, B.Sc. to Margaret Ellen Irving, B.Pharm., M.P.S., Harleigh House, Lytton Road, Hatch End, Middlesex.

DEATHS

BARNARD. — On August 23, Mr. Fred Barnard, M.P.S., 43 Vancouver Avenue, King's Lynn, Norfolk. Mr. Barnard qualified in 1932.

BROWN. — Suddenly, on August 31, Mr. William Smillie Brown, M.P.S., 4 Rhannan Terrace, Glasgow, S.4. Mr. Brown qualified in 1916.

CHESTER. — Recently, Mr. Norman Coulson Chester, M.P.S., 18 Petteril Street, Carlisle, Cumberland, aged sixty-one. Mr. Chester, who qualified in 1925, took his first post in West Africa, where he worked several years for the West African Drug Co. He returned to England and eventually settled in Carlisle in 1938 as pharmacist with Mr. J. Scott, Scotch Street.

DAVIES. — On July 30, Mr. Thomas Albert Davies, M.P.S., 225 Birchfield Road East, Northampton. Mr. Davies qualified in 1938.

FINLAY. — On August 30, Mr. James Finlay, M.P.S., 88 Falcon Court, Edinburgh, Mr. Finlay qualified in 1898 and was in business for many years in Morningside Road, Edinburgh. After his semi-retirement, the sudden death of his son, who was succeeding him, compelled him to return to business until the premises were sold. A keen golfer, he was a founder member of Edinburgh Chemists' Golf Club and later its captain. When in his seventies, he achieved the rare distinction of "beating his age" by returning a card of 68 in a chemists' competition over his home course of Mortonhall, adding a seventy-one to that in a friendly game the same day. Mr. Finlay was senior elder of Greenbank Parish Church and for more than a quarter of a century conducted a Sunday-afternoon Bible Class for men in the Cowgate district of the city.

LEWIS. — On July 23, Mr. Dan Lewis, M.P.S., 89 Gladstone Way, Hawarden, Chester. Mr. Lewis qualified in 1904.

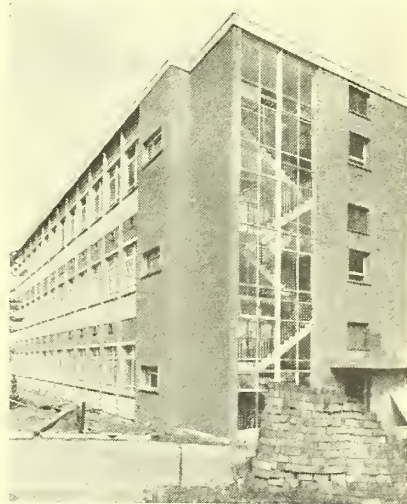
McNAB. — On August 22, Mr. Thomas McNab, Douglas View, Shawhead, Coatbridge, Lanarks. Mr. McNab qualified as a chemist and druggist in 1916 and retired in 1963.

RAE. — On September 6, after a short illness, Mr. John Rae, F.P.S., 7 Dibbins Hey, Bebington, Ches, aged sixty-nine. Mr. Rae, after qualifying as a chemist and druggist in 1920, settled in Liverpool, taking a post as assistant with Clay & Abraham, Ltd. Apart from a three-year break (1926-29) when he was in charge of the analytical laboratories of R. Sumner & Co., Ltd., Liverpool, he was with Messrs. Clay & Abraham until 1953, when the company went into voluntary liquidation. He then founded a new company, Clay & Abraham (Manufacturing), Ltd., taking over the wholesale and manufacturing sides of the original business. In 1958 Mr. Rae was granted a Fellowship of the Pharmaceutical Society (the second person to receive the award under the Society's by-laws), for his scientific contributions, which were many and valuable. Over the years he made numerous contributions to *THE CHEMIST AND DRUGGIST* and other pharmaceutical publications. He took a prominent part in the activities of the Liverpool Chemists' Association and Branch of the Society, holding the highest offices in both bodies in 1938 and 1939.

SAWBRIDGE. — Recently, Mr. Herbert Sawbridge, M.P.S., The Old Bank Pharmacy, 2 High Street, Haslemere, Surrey. Mr. Sawbridge qualified in 1920.

SHORT. — On July 28, Mr. Edward Lovat Short, M.P.S., 8 Smit Crescent, Eastlea, Salisbury, Southern Rhodesia. Mr. Short qualified in 1926 and practised in Amble, Northumberland, until 1947, when he emigrated to Rhodesia.

SPARKES. — On August 3, Mr. William Warburton Pearce Sparkes, M.P.S., Beresford, Maypole Road, East Grinstead, Sussex, aged eighty-six. Mr. Sparkes qualified in 1903.



MOVE TO NEW HOME: The new home of the Wellcome Laboratories of Tropical Medicine at Langley Court, Beckenham, Kent. Prior to the move the laboratories have been housed in the Wellcome Building, Euston Road, London, since 1934.

ULTRA-FINE AND "VIRTUALLY SOLUBLE"

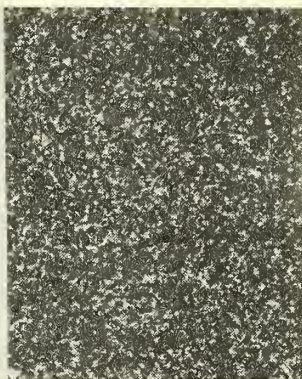
Properties of "new microfined Aspro"

OUTCOME of a study by the Nicholas Research Institute of all the available information on fine-particle therapy led its research workers to conclude that there was enough evidence to show that, if the size of the constituent particles of the branded aspirin of Nicholas Products, Ltd., Slough, Bucks, Aspro, could be drastically reduced, without jeopardising its stability, the absorption rate might be

ble" on a foil base, which is regarded as the most hygienic and functional presentation available.

A new range of packs, display outers and merchandising material has been adopted for the new Aspro, which is being promoted by "the biggest advertising campaign that has ever supported a product from the Aspro-Nicholas group of companies." The sales aids, available to all pharmacy

outlets, take the form of wall "dispensers," shelf strips and window stickers bearing the words "We Stock New Microfined Aspro." A special brochure for pharmacists gives the full technical background and details of the advertising and merchandising that is supporting the launch. The launch to consumers starts on November 8. In the first five weeks, 60-sec. television commercials will be screened 264 times.



ULTRAFINE ASPIRIN: At left, Photomicrographs, to the same magnification, showing acetylsalicylic-acid particles in old and new (microfined) Aspro. Right: The range of packs of new microfined Aspro (pocket pack of twenty; family pack of fifty-four; home pack of 108; emergency pack of five).

increased significantly, and "near solution" might be obtained when the tablet was dispersed in water.

Accordingly the company's chemical engineers caused the acetylsalicylic acid to be milled to "the furthest limit of fineness consistent with dispersibility, stability and the practical limitations of tablet manufacture. Comparisons of the particle size of the new and the old Aspro were compared by microscopic counting of suspended particles by Coulter-counter measurements; and by photomicrography, and all three methods showed the new microfined product to be about thirty times finer than the one hitherto marketed.

Studies of the serum salicylate concentrations in man after oral administration of the drug showed that the average blood levels obtained were invariably higher after administration of microfined than after the old product, the difference being greatest twenty minutes after dosage, when the levels differed by a factor of 2.25. The finer drug appeared in the bloodstream three times as soon.

The optimum degree of microfining having been established, a tablet was produced that retained its form when placed on the tongue long enough to make dry swallowing possible yet, when dropped in a glass of water, went into suspension in about 15 secs.

On a manufacturing scale the fine material proved so intractable that existing machines were useless. Not until new ones were designed and built could the powder be successfully compressed into tablets for mass sale. The improvement has also demanded a departure from the Sanitape strip used for the company's product for many years. The new tablets are now enclosed in a PVC "push-through bub-

A NEWCOMER IN VACUUM WARE

Minister opens new factory in West Hartlepool

A NEW £750,000 vacuum-ware factory for Aladdin Industries, Ltd., at Brenda Road, West Hartlepool, was formally opened by Mr. Austen Albu (Minister of State, Department of Economic Affairs) on August 27.

The company will manufacture a range of flasks of advanced design, claimed superior to other types, but selling at comparable prices. Production will run into several million flasks a year, providing employment for about 500 people. The American associate of Aladdin Industries, Ltd., has been manufacturing flasks since the early 'thirties. Five basic models will be

produced, in 16-oz. and 32-oz. sizes, with drip-free pouring from any angle, insulated leak-proof stoppers, and maximum protection to the glass filler. Two models with wide mouths will store oven-hot or frozen food. A vacuum pitcher gives instant pouring without removing the cap.

The factory covers 84,000 sq. ft. of a 21-acre site, allowing for considerable expansion. A glass filler line trims inner and outer shells to size, seals them together, silvers the inner surfaces, evacuates air and electronically tests every one of the shells for thermal efficiency.



Aladdin Escort 16-oz. and 32-oz. vacuum flasks, wide-mouth 16-oz. and 32-oz. flasks and 32-oz. vacuum pitcher.

"TECHNOLOGICAL BREAKTHROUGH" IN BLADES

Edge-treated micro-chrome stainless steel

WHAT the company's managing director described as a "technological breakthrough" is involved in the new Super Silver stainless blade of the Gillette Safety Razor Co., Great West Road, Isleworth, Middlesex. Made of a new micro-chrome steel, the blade is edge-treated by a new patented process of the company. The result, a blade for which are claimed the advantages of improved shaving qualities, greater consistency and longer life. The new blade is being sold at the same price as the existing Silver Gillette, unsold stocks of which in dealers' hands are being replaced by the manufacturers with the new blade.

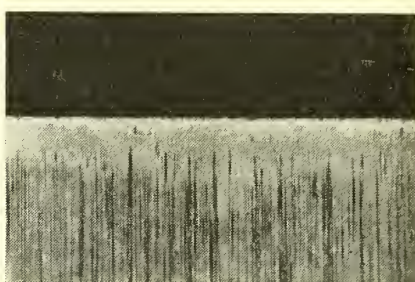
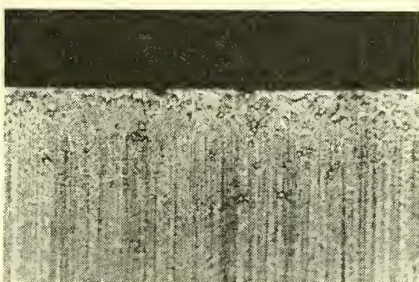
Micro-chrome is the company's name for the high-chrome micro-structure steel that is used for the blades. It differs from ordinary stainless steel in having lower carbon, and higher



chromium contents, and has been developed by the company jointly with the steel manufacturers. Being free of the relatively large carbide particles contained in the ordinary steel (and which, after honing, can leave minute flaws in the shaving edge), the steel has a more uniform metallurgical

structure. In consequence it takes a stronger, more even edge than is possible with "ordinary" stainless blades, and the edge stands up much better, it is stated, to the wear and tear of shaving.

The coating of the blades, a process in which Messrs. Gillette hold the basic patents and applied to virtually all stainless blade edges on the market, is being carried out on the new blade by a newer technique—named EB-7 and described as "infinitely superior"—that maintains an ultra-thin film of a much more tenacious new coating on the blade edge, to which it continues to adhere after repeated shaves (other coatings are pushed back). That "technological breakthrough" ensures high-quality shaving throughout the life of aluminium trim. The shaver has satisfied the Approvals Board.



PHOTOMICROGRAPH COMPARISONS: Edges of three blades (shown enlarged 1,000 times). Left, a blade of ordinary steel that has been used for six shaves. Centre, a blade from ordinary stainless steel. Right, one of the new Gillette blades. The photomicrograph shows the uniformity of the micro-chrome steel edge and smoothness of the EB-7 coating.

NEW PRODUCTS AND PACKS

PHARMACEUTICAL SPECIALITIES

Additions to Range.—Continental Laboratories, Ltd., 85 Church Road, Hove, 3, Sussex, are adding twenty-three new items to their range of Co-tab tablets on October 1.

For Infusion Urography.—The Bayer Products Co., Winthrop House, Surbiton-upon-Thames, Surrey, now offer a 250-mil pack of their radio-opaque medium Hypaque 25 per cent. (sodium diatrizoate, B.P.). The pack is a standard 250-mil drip infusion bottle and is intended exclusively for use in infusion urography procedures.

OVER-THE-COUNTER MEDICINALS

"Twelve-hour" Anti-cold Capsule.—Menley & James Laboratories, Welwyn Garden City, Herts, announce the "biggest advertising campaign ever for a chemist-only cold product," in launching their new decongestant capsule with

12-hour action: Contac 400. The 6-capsule standard wallet provides treatment for the congestion symptoms of a cold for three days and nights. There is also a 12-capsule economy size.

SUNDRIES

Now in Tariff.—Ward, Blenkinsop & Co., Ltd., Fulton House, Empire Way, Wembley, Middlesex, announce that ½-in. Ototrane ribbon gauze, hitherto available only to hospitals in 6-yd. rolls, is now included in 1-yd. pack in the Drug Tariff under the name hydrargaphen-prednisolone ribbon gauze (Drug Tariff).

Choice of Shave.—Chief feature of the Selectric shaver recently launched by Remington Electric Shaver, Ltd., 26 Kensington High Street, London, W.8. is a calibrated dial that allows the user to select a setting of the head to suit the toughness of the beard. Four settings are provided which progressively raise the heads in relation to the comb guides, covering the range from tender skins to tough beards. A further setting allows the trimming of moustaches and sideboards, and a final dial setting opens a door at each end of the head for blow-through cleaning. A spring-loaded centre bar helps adjust the area of the cutting edges exposed when shaving in difficult areas. The motor, which operates on

110/220 volts, has been increased in power, and the "throw" of the cutters has been increased. Those features, together with smoother, thinner and sharper heads, are designed to improve the speed and comfort of shaving. A rocker-type on-off switch is provided. Finish is in matt black with aluminium trim. The shaver has satisfied the Approvals Board.



TRADE NOTES

Net Weight Change.—Howard Lloyd & Co., Ltd., Clerk Green, Batley, Yorks, state that the tube of Lloyd's adrenaline cream now contains 30 gm. instead of 1 oz.

Discontinued.—E. R. Squibb & Sons, Ltd., Regal House, Twickenham, Middlesex, have discontinued issuing the bottle of twenty-five Di-Ademil tablets, 50 mgm. and the 200-mgm. jar of Ad-cortyl-A cream.

Change in Size.—A. Wander, Ltd., 42 Upper Grosvenor Street, London, W.1, now issue Velactin (readily assimilated milk substitute of vegetable origin for milk allergies) in 1-lb. tin in place of the previous 9-oz. pack.

In Ten-dose Vial Only.—Pfizer, Ltd., Sandwich, Kent, announce that supplies of Flubron (aqueous influenza virus polyvalent vaccine) for the coming season will only be available in vial containing ten doses.

An Additional Size.—Glaxo Laboratories, Ltd., Greenford, Middlesex, announce that the bactericidal broad-spectrum antibiotic Ceporin is now available in 1-gm. vial in addition to the existing 250-mgm. and 500-mgm. vials.

Price Increase.—Keldon, Ltd., Wadsworth Road, Perivale, Middlesex, advise that from October 4 the price of Panets paracetamol tablets are to be increased. Orders received by October 3 are being invoiced at the present price.

Vaccines Discontinued.—Beecham Research Laboratories, Great West Road, Brentford, Middlesex, are discontinuing on September 30 the supply of bacterial vaccines in the Wright-Fleming range. Flugen and Pollaccine continue available.

Twelve Now in Pack.—Willows Francis, Ltd., 73 Shackelwell Lane, London, E.8, announce that Emoform medicated tooth-paste is now supplied in display carton of six tubes instead of twelve as previously. Prices are unchanged.

Ready-filled Displaypiece.—International Chemical Co., Ltd., 12 Chenies Street, London, W.C.1, have designed a composite display pack containing

and if necessary distribution of toiletries under contract. They operate automatic plastic tube filling and sealing equipment and are in a position to package large quantities of plastic tubes.

Antibiotic Price Reductions.—Dista Products, Ltd., Fleming Road, Speke, Liverpool, 24, announce that with effect from September 6 the prices of a number of their antibiotic preparations are substantially reduced. Retail pharmacists have been advised of those changes and the credit arrangements. Claims should not be submitted through wholesalers.

Now Nationally Available.—Riker Laboratories, Morley Street, Loughborough, Leics, announce that their speciality Dorbanex liquid laxative is now being promoted nationally. Dorbanex contains in each 5-mil teaspoonful 25 mgm. of 1:8-dihydroxyanthraquinone and 200 mgm. of poloxalkol. Packs are bottles of 60 and 500 mls.

Change of Pack.—Armour Pharmaceutical Co., Ltd., Hampden Park, Eastbourne, Sussex, state that to facilitate the administration of the B.P. recommended dose of Acthar corticotrophin (sterile), a vial containing 45 international units is being introduced. The 30-unit and 75-unit vials are being discontinued when present stocks are exhausted, and 45-unit material is being supplied against subsequent orders.

Preselected.—Butler & Crispe, Ltd., 80 Clerkenwell Road, London, E.C.1, offer in their "selection B" a range of holdalls and cosmetic bags from which, they claim, the stockist gains an outstanding window or counter display on minimum expenditure, wide coverage in price and design, and a model to suit every class of trade. All are in gay continental or contemporary shades and boxed in acetate or with acetate lid for immediate display.

Change of Name.—The central neuro-regulatory agent ANP 235 of Lloyd-Anphar, Ltd., 36 Berkeley Square, London, W.1 (B.P. approved name meclofenoxate) is henceforth to be known as Lucidril. Indications are mental confusion and related conditions. To facilitate administration a new 300-mgm. tablet has been introduced. Normal adult daily dose is 3-4 tablets (900-1,200 mgm.). The 100-mgm. tablet is retained for administration to children. All the tablets are now foil packed.

Winter Trade Exhibitions.—To introduce the winter photographic season, Bradley & Bliss, Ltd., are holding a series of exhibitions at which is being shown a wide range of seasonal equipment, and at which demonstrations will be given of the latest cine and still projectors. Each will be open from 2.30 to 9.30 p.m. Dates and places are:—Wednesday, September 22; Small Town Hall, READING; Thursday, September 23; Maple Room, Fairfield Halls, CROYDON; Wednesday, September 29, Chaucer Hotel, CANTERBURY; and Thursday, September 30, Queen's Hotel, Marine Parade, EASTBOURNE.

Christmas Showrooms

THE following have been notified:—

ARONDE LABORATORIES, LTD., Mostyn hotel, London, W.1. September 13-16.
H. BRONNLEY & CO., LTD., Grand Central hotel, Belfast, September 13-17.
BROOK, PARKER & CO., LTD., Imperial hotel, Newcastle-on-Tyne, September 14-16; Royal Station hotel, Hull, September 28-30.
COTY (ENGLAND), LTD., Corporation hotel, Middlesbrough, September 14-15.
COLUMBIA PRODUCTS CO., LTD., Mostyn hotel, London, W.1, September 13-16.
GOYA, LTD., Queen's hotel, Cardiff, September 13-17; Station hotel, Aberdeen, September 14-17.
J. GROSSMITH & SON, LTD., Grand Central hotel, Belfast, September 13-17; Queen's hotel, Cardiff, September 13-17; St. George's hotel, Llandudno, September 14-16.
PARFUMS DE LUCIEN LELONG, LTD., Queen's hotel, Cardiff, September 13-17.
FIELDS OF BOND STREET AND HOUSE OF MANHATTAN, Queen's hotel, Cardiff, September 13-17.
MORNY, LTD., Grand Central hotel, Belfast, September 13-16; Queen's hotel, Cardiff, September 13-16.
SCOTT & BOWNE, LTD., Kensington hotel, Belfast, September 13.
ROBERTS WINDSOR, LTD., Grand Central hotel, Belfast, September 13-16; Queen's hotel, Cardiff, September 13-16.

Bonus Offers

CIBA LABORATORIES, LTD., Horsham, Sussex. *Otrivine* preparations. Thirteen invoiced as twelve on minimum 3-doz. order. *Bradosol* preparations (assorted if desired). Thirty-nine invoiced as thirty-six; eighty-one invoiced as seventy-two; 14 doz. invoiced as 12 doz.

GEIGY (U.K.), LTD., pharmaceuticals division, Manchester, 23. Desogen lozenges. Twenty-eight invoiced as twenty-four. Fifty-eight invoiced as forty-eight. Ninety invoiced as seventy-two.

HILL'S PHARMACEUTICALS, LTD., Nelson, Lancs. Hill's sore throat lozenges. Fourteen invoiced as twelve.

POTTER & CLARKE, LTD., River Road, Barking, Essex. Potter's catarrh pastilles. Thirteen invoiced as twelve on minimum 3 doz. Till November 30.

SOUTHALLS (SALES), LTD., Bessemer Road, Welwyn Garden City, Herts. *Nivea creme* (new packs). 15 per cent. off trade price and 15 per cent. off purchase tax. Till October 29. *Atrix*o hand-care cream 17½ per cent. off trade price plus 17½ per cent. off purchase tax on minimum order of eight cases. Till November 13.

TONI Co., 215 High Holborn, London, W.C.2. *Focus* hairspray. Twenty-four units invoiced as eighteen. Till November 30. *Caress* refill. Thirty-six invoiced as thirty-three (all of one strength or twelve of one and twenty-four of the other). *White Rain* shampoo. Twelve invoiced as eleven on order for 6 doz. assorted sachets and 1 doz. assorted bottles, or on 9 doz. assorted sachets. Plus free set of Christmas tree lights fixed to a display unit.

WILLIAM R. WARNER & CO., LTD., Eastleigh, Hants. Tyrosolven. 20-lozenge pack. Fifteen invoiced as twelve.

Premium Offers

TONI Co., 215 High Holborn, London, W.C.2. *Focus* crystal-clear shampoo banded to each *Focus* hairspray. *Caress* refills (regular and hard-to-hold) at "threepence off." *White Rain* shampoo. Crowners on bottle and card in special three-sachet pack entitle purchaser to a set of Christmas-tree lights at approximately half-price.



3 doz. Anadin 20's, 1 doz. Anadin 50's and ½ doz. Anadin 100's. The display-piece comes already filled, and is assembled in seconds.

Contract Packaging.—Nuttress Laboratories, Ltd., 59 Melbourne Street, Newcastle-on-Tyne, 1, offer facilities for the manufacture, packing

TRADE REPORT

The prices given are those obtained by importers, or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, SEPTEMBER 8: Although the markets have been dull during the week, the fighting that has flared up between India and Pakistan in the last few days has set a problem for merchants and buyers alike.

The area of conflict may be somewhat remote from ports or collecting centres but if the scale of hostilities grows and lasts over a prolonged period the effect on supplies of produce from that continent may soon be felt. Prices of CRUDE DRUGS were mostly repeated in the absence of no real business. Among AROMATIC SEEDS, Moroccan CUMIN was dearer by 30s. cwt, HONEY was quiet but reasonably firm. Argentine and Mexican varieties were up by 5s. cwt. White Sarawak PEPPER was lower by one penny lb. for shipment.

In ESSENTIAL OILS the feature of the week was undoubtedly provided by BERGAMOT which rose steeply. The fruits have been dropping off the trees due to the heat so that the harvest will only be a small one. With no forward offers by Brazilian PEPPERMINT the spot value rose sixpence per lb. Italian "Mitcham" new crop at 82s. 6d. per lb. represents a considerable premium over present spot values for old crop. Lower by sixpence per lb. were Spanish SAGE, PENNYROYAL and ROSEMARY. For the second time within three weeks the price of D-PANTHENOL has been reduced at £10 per kilo, the present reduction is of the order of 79s. a kilo. SODIUM PERCHLORATE and COLCHICINE are among a list of chemicals which have been temporarily exempted from import duty from September 2.

Pharmaceutical Chemicals

Where material is of foreign origin prices given below may be subject to import surcharge.

BENZYL BENZOATE. — B.P. in 1-ton lots, 4s. 6d. per lb.

BROMIDES.—Crystals (per kilo):—

	Under 50 kilos		50 kilos	
	s.	d.	s.	d.
POTASSIUM* ...	6	3	5	8
SODIUM ...	6	3	5	8
AMMONIUM ...	7	2	6	7

*Powder is fourpence per kilo more.

CARMINE.—One-cwt. lots are 180s. per lb.

CHLOROCRESOL.—Pharmaceutical quality, 7s. 7d. per lb. (1-cwt. lots).

CHLOROFORM. — 35-litre lots in winchesters, B.P., 11s. 5½d. per litre; in drums, 10s. 7d.; 175-litre lots, 11s. and 10s. 1½d.

CHLOROPHYLL. — Water-soluble, 100 per cent. (medicinal grade), 250s. per lb.; oil Soluble, 25s. per lb.

CHLOROXYLENOL. — B.P.C., 5s. 3d. per lb. for 5-cwt. lots; 5s. 1d. per lb. for 1-ton lots.

CITRATES.—Per kilo:—

	50 kilos		250 kilos		1,000 kilos	
	s.	d.	s.	d.	s.	d.
SODIUM† ...	5	4	4	10	4	8
POTASSIUM† ...	5	7	5	1	4	11
IRON AND AMMONIUM* ...	9	8	9	4	9	1

CORTISONE. — One-kilo lots, ACETATE 4s. 6d.; HYDROCORTISONE ACETATE or ALCOHOL, 4s. 6d. per gm.

DIGOXIN.—100-gm. lots, 44s. per gm.

DITHRANOL.—B.P. offered at 6s. 9d. per oz. for 7-lb. lots.

EPHEDRINE.—ALKALOID nominally 6s. 6d. per oz.; SULPHATE, 4s. 6d. and HYDROCHLORIDE, 4s. 3d. per oz.

ETHER. — Per lb in winchesters: B.P. TECHNICAL, B.S.S., 5-cwt., 2s. 9d.; (4s. 4d. per litre). In drums the price is 2s. 1d. per lb. ANAESTHETIC, B.P., 6-cwt., 3s. 11½d.; 10-cwt., 3s. 7½d.

GLUCOSE. — MONOHYDRATE, B.P., powder 77s. per cwt., delivered in 1-ton lots; ANHYDROUS, 134s. LIQUID, in drums, 56s. per cwt. for 5-drum lots.

GLYCERIN.—Chemically pure (per cwt.).

	Over 25 tons		5 tons and under 25 tons		1 ton and under 5 tons		Under 1 ton
	s.	d.	s.	d.	s.	d.	s.
TANK WAGONS							
10-14 tons	176	0	—	—	—	—	—
5-10 tons	177	6	179	6	—	—	—
DRUMS							
5 cwt.	180	0	182	0	185	0	191
2½ cwt.	182	6	184	6	187	6	193
TINS							
56 lb.	184	0	186	0	189	0	195
28 lb.	205	0	207	0	212	0	220
14 lb.	211	0	213	0	218	0	226

Minimum delivery 1-cwt. Drums charged and returnable. Minimum terms for technical grade glycerin s.g. 1.2627 are 171s. per cwt. for lots of over 25 tons in bulk deliveries of 10-14 tons.

GLYCEROPHOSPHATES. — Per kilo in 50-kilo lots: CALCIUM, B.P.C., 28s. 2d.; B.P.C., 35s. 5d.; MANGANESE, N.F.X., 49s. 7d.; POTASSIUM, 50 per cent., B.P.C., 8s. 6d.; SODIUM, 50 per cent., B.P.C., 5s. 11d. and powder, B.P.C., 1949, 18s. 8d.; GLYCEROPHOSPHORIC ACID, 20 per cent., 10s. 8d.

GUAIACOLS. — LIQUID B.P.C., 16s. per lb. for 1-cwt. lots; CRYSTALS, 15s. 9d.; CARBONATE, 18s.

HEXAMINE MANDELATE. — 50 kilo lots, 27s. per kilo; 1,000 kilos, 23s. 6d.

HOMATROPINE. — 16-oz. lots (per oz.): ALKALOID, 30s. 6d.; HYDROBROMIDE, 24s. 6d.; HYDROCHLORIDE, 28s. 6d.; METHYLBROMIDE, 25s. 6d. 1-oz. rates are 1s. 6d. per oz. above those rates.

HYDROGEN PEROXIDE.—For 27.5 per cent. by weight, £115 per ton; 35 per cent., 138s.

ISOPRENALINE SULPHATE. — 5-kilos, 325s. per kilo.

KAOLIN. — Light, 500 kilos, 1s. 2d. per kilo and 1,000 kilos, 1s. 1½d.

LACTATES. — CALCIUM, B.P., 270s. per cwt. in 5-cwt. lots and 280s. for 1-cwt. lots; CALCIUM SODIUM, 4s. 11d. and 5s. per lb.

LACTOSE. — B.P. in 1-ton lots packed in 1-cwt. paper-lined sacks, £129 10s. per ton, delivered in the United Kingdom.

LEAD ACETATE.—B.P. crystals, 4s. 5d. per kilo.

MERCUROCHROME. — 5-kilo lots are 102s. 6d. per kilo.

MERCURY DERIVATIVES.—Rates (per kilo) for under 50-kilo lots—AMMONIATED MERCURY, B.P., powder, 185s.; PERCHLORIDE, B.P.C., powder, 161s.; SUBCHLORIDE (calomel), B.P.C., 190s.; OXIDES, yellow, B.P.C., 199s.; red B.P.C., 1949, 203s.; IODIDES, 1954 (25-kilo lots), 133s. per kilo; OXYCYANIDE (12½ kilos), 253s.

METHYL SALICYLATE. — Five-ton lots, 3s. 2d. per lb.; 1-ton, 3s. 2½d.; 10-cwt., 3s. 2d.; 5-cwt., 3s. 6d.; 1-cwt., 3s. 8d.

METHYL TESTOSTERONE. — Per kilo, £95.

PARACETAMOL. — One-ton lots are now 10s. 2d. per lb.

PARAFORMALDEHYDE.—B.P.C. is 1s. 3d. per lb. for 1-ton lots; 1s. 5d. per lb. for 1-cwt.

PARALDEHYDE. — B.P. in 12-winchester lots, 2s. 10d. per lb. (6s. 3d. kilo); 10-gall. carboys, 2s. 4d.

PHENAZONE.—Imported, 9s. 6d. per lb.

PHENOLPHTHALEIN.—One-cwt, 9s. per lb.

PHENACETIN.—B.P. one-ton lots, 6s. 3d. per lb.; 1-cwt., 6s. 9d.

PHYSOSTIGMINE.—Per oz. for 4-oz. lots: ALKALOID, 476s.; SALICYLATE, 321s.; SULPHATE, 411s.

PIPERAZINE. — Less than 50 kilos are: ADIPATE, 10s. 3d. per kilo; CITRATE, 18s. 6d.; HEXAHYDRATE, 13s. 3d.; PHOSPHATE, 20s. 6d.; TARTRATE, 19s. 6d.

POTASH SULPHURATED. — Lump, B.P.C. 1959, 6s. 11d. per kilo in 50-kilo drums.

POTASSIUM ACETATE. — (Per lb.) 1-cwt. lots, 3s.; 5-cwt., 2s. 8d.; 10-cwt., 2s. 6d.

POTASSIUM BICARBONATE.—B.P. powder, 110s. per cwt. 1-4 cwt. lots and 105s. per cwt. for 5-cwt. and over.

POTASSIUM BROMATE. — In 5-cwt. lots, 5s. 3d. per lb.

POTASSIUM CARBONATE. — 50-kilo kegs, 5s. 1d. per kilo.

POTASSIUM CHLORATE. — 50-kilo cases, 5s. 6d. per kilo.

POTASSIUM CHLORIDE. — Pure 50-kilo sacks, 3s. 4d. per kilo.

POTASSIUM HYDROXIDE. — Pellets, B.P., 9s. 2d. per kilo; sticks, 15s. 5d.; technical flake, 4s. All 50-kilo lots.

POTASSIUM 8-HYDROXYQUINOLINE SULPHATE.—1-kilo is 55s. per kilo.

POTASSIUM METABISULPHITE. — Crystals, 50-kilo kegs, 3s. 4d. per kilo.

POTASSIUM NITRATE. — Pure in 50-kilo sacks, 2s. 1d. per kilo.

POTASSIUM PERMANGANATE. — B.P. in 1-cwt. lots, 2s. 0½d. per lb. Technical 218s. 6d. per cwt.; 1-ton lots, quoted at 207s. per cwt.

POTASSIUM PHOSPHATE. — B.P.C. 1949, 50-kilo kegs of POWDER, 8s. 3d. per kilo, GRANULAR, 8s. 9d.

POTASSIUM QUADROXALATE. — 1-cwt., 3s. 6d. per lb.

POTASSIUM SULPHATE. — B.P.C. '49, 1s. 2d. per lb.

POTASSIUM THIOCYANATE. — 50-kilo lots, 11s. 6d. per kilo in kegs.

SANTONIN.—5-kilo lots, 320s. per kilo.

SULPHUR. — (Per ton). SULBLIMED FLOWERS, B.P., £60; TECHNICAL, £55; GROUND, £20 to £25; PRECIPITATED, B.P., £120; ROLL, £28 to £30. All ex store.

Crude Drugs

ACONITE. — Spot, Spanish, *napellus*, 2s. 4d. per lb.; shipment, 2s. 3d., c.i.f.

AGAR. — Kobé No. 1, 13s. per lb. in bond; shipment, 12s. 6d., c.i.f. Spanish scarce on the spot at 15s. 3d., duty paid.

ALOE. — Cape primes and Curaçao, 295s. per cwt. spot. Shipment, 260s. c.i.f.

ANISE. — Chinese, STAR, 145s. per cwt. spot, duty paid; f.a.q. for shipment, 116s., c.i.f.

BALSAMS.—Per lb.; CANADA, 24s., spot. COPAIBA, B.P.C. spot, 12s. nominal. PERU, 25s., spot; shipment, 24s. 6d., c.i.f.,

nominal, TOLU: B.P., from 10s. 6d. to 27s. 6d.

BAY.—LEAVES, 1s. 9d. per lb., spot.

BELLADONNA.—LEAVES, 6s. per lb., nominal, spot, ROOT, 1s. 8d. per lb., spot; shipment, 1s. 7d., c.i.f.

BENZOL.—Sumatra block spot from £20 to £40 per cwt. as to quality.

BUCHU. — Spot, 5s. per lb. Stocks at origin exhausted.

CALAMUS. — Root, 100s. per cwt., spot, 87s. 6d., c.i.f.

CALUMBA.—Root is offered at 175s. per cwt. spot.

CAMPBOR. — B.P. powder for shipment, 5s. 3d. per lb., c.i.f.; spot, 6s. 6d., duty paid.

CARDAMOMS. — Aleppy greens, spot, 20s. per lb.; shipment, 22s. 3d., c.i.f.

CASCARA. — Spot, 225s. per cwt.; 1965 peel for shipment, 216s., c.i.f.

CASSIA. — *Fistula*, 105s. per cwt. spot; *lignea*, whole shipment, 205s., c.i.f.; selected broken, 195s., c.i.f.

CHAMOMILE.—Belgian flowers scarce at from 18s. per lb., upwards, spot; German type, 7s. 6d.

CHERRY BARK. — Thin natural, 2s. 3d. per lb., shipment, 2s. 1d., c.i.f.

CHILLIES.—Zanzibar, spot, not quoted; shipment, 330s. per cwt., c.i.f. Mombasa for shipment, 345s., c.i.f.

CINNAMON.—BARK, Seychelles, 140s. cwt. spot; shipment, 130s., c.i.f.; QUILLS, Ceylon (per lb., c.i.f.): 4 O's, 10s.; single O, 9s. 4d.; quillings, 5s. 3½d.

CLOVES. — Zanzibar, spot, 2s. 10½d. per lb. standard grade, shipment, 2s. 7½d., c.i.f.

COCHINEAL. — Canary Isle silver-grey, 20s. to 22s. 6d. per lb.; black brilliant, 22s. to 25s. Peruvian silver-grey, 15s.

COCILLANA.—Bark 1s. 6d. per lb. on the spot.

DIGITALIS.—*Purpurea*, leaves, 2s. 6d. per lb.

ELEMI. — Spot, 1s. 7d. per lb.; shipment: new crop, 1s. 5d., c.i.f.

ERGOT.—Portuguese, spot, 11s. per lb.; shipment, 11s., c.i.f., nominal. Continental, 10s., spot.

GENTIAN.—Root, 185s. per cwt. spot; shipment, 180s., c.i.f.

GINGER.—(Per cwt.). Nigerian, September–October shipment, split, 85s., c.i.f.; peeled, 210s. spot; African, spot, 240s. per cwt. nominal; September–October, 210s., c.i.f. Jamaica No. 3, spot, 400s., shipment, not quoted. Cochinchina, spot, 320s.; shipment, 315s., c.i.f.

GUM ACACIA.—Kordofan cleaned sorts, 162s. 6d. per cwt., spot; shipment, 156s., c.i.f.

HONEY. — (Per cwt.). Australian light amber, spot, 120s. to 125s.; and medium amber, 110s. to 115s.; Argentine, 115s. to 117s.; Canadian, 175s. to 180s.; Mexican spot, 120s. to 125s.

IPECACUANHA. — High testing material short on spot, Matto Grosso for shipment, 56s. per lb., c.i.f. and spot, 57s. 6d. Costa Rican, 72s. spot, nominal; shipment, 70s., c.i.f. Colombian, 56s. 6d., c.i.f. for shipment.

KARAYA.—No. 1 f.a.q. gum, spot, 415s.; No. 2, 300s. per cwt.

KOLA NUTS.—African, spot, 6½d. per lb., nominal; shipment, 5½d., c.i.f.

LANOLIN. — ANHYDROUS B.P. is from 2s. 6d. to 2s. 10d. per lb. in 1-ton lots delivered free drums. Commercial grades from 1s. 9½d.

LEMON PEEL.—Spot, 1s. 9d. per lb.; partially extracted, 1s.

LINSEED. — Whole, 72s. 6d. per cwt.; crushed, 110s.

LOBELIA.—Dutch on the spot offered at from 4s. 3d. to 5s. 3d. per lb. New crop, October shipment, 4s. 6d., c.i.f.

MACE.—Whole pale blade, 14s. per lb. for forward delivery.

MENTHOL.—(Per lb.). Chinese for shipment, 27s. 6d., c.i.f.; spot, 28s. 6d., in bond. Brazilian for shipment, 28s., c.i.f.; spot, 31s. 6d. to 32s., duty paid.

MERCURY. — Spot nominally £265 per flask of 76-lb. ex warehouse.

NUTMEGS.—(Per lb.). West Indian, spot, 80's, 9s.; 110's, 7s. 8d.; sound unsorted, 7s.; defectives, 5s. 6d. East Indian for shipment, 80's, 8s. 6½d.; 110's, 6s. 11d., b.w.p. 4s. 4d., c.i.f.

NUX VOMICA.—Cochin, 110s. per cwt. on the spot; shipment, 95s., c.i.f.

ORANGE PEEL. — Spot: Sweet ribbon, 1s. 8d. per lb., bitter quarters: West Indian, 10½d.; Spanish, 1s. 9d.

PAPAIN. — East African No. 1, 21s. 6d. per lb., c.i.f. with Ceylon about the same price.

PEPPER.—White Sarawak, spot, 3s. 7½d. per lb.; shipment, 3s. 6d., c.i.f. Black Sarawak, 3s. 3d., spot, nominal; shipment, 2s. 10½d., c.i.f. Black Malabar, spot, not quoted; shipment, 395s. per cwt., c.i.f.

PODOPHYLLUM.—Spot per cwt.: *Emodi*, 230s.; 210s., c.i.f.

QUILLAIA.—For shipment, 135s. per cwt. c.i.f.; spot, 130s.

RHUBARB.—Manufacturing grades offered at from 5s. to 8s. 6d. per lb., other grades cleared spot and forward.

SARSAPARILLA. — Jamaican native red, spot, 3s. 6d. per lb.; shipment, 3s., c.i.f.

SEEDS. — (Per cwt.). ANISE. — Spanish, 240s., duty paid. CARAWAY.—Dutch, 145s., duty free. CELERY. — Indian, 180s., spot sellers; shipment easier at 162s. 6d., c.i.f. CORIANDER. — Moroccan, 60s., duty paid; shipment, 52s., c.i.f.; Rumanian whole, 60s., c.i.f. CUMIN.—Steady, Indian, 325s.; Moroccan, dearer at 360s., duty paid; shipment, 325s., c.i.f.; Cyprian, 325s., c.i.f. DILL.—Indian, 120s., spot; shipment, 92s. 6d., c.i.f. FENNEL.—Chinese, 130s., duty paid; shipment, 112s. 6d., c.i.f.; Indian, 135s., c.i.f. FENUGREEK.—Moroccan, 48s. 6d., duty paid; shipment, 41s., c.i.f. MUSTARD. — English, 65s. to 85s. according to quality.

SENNA. — (Per lb.). Tinnevely LEAVES spot: Prime No. 1, 2s.; No. 3, f.a.q., 1s. 1d. Shipment: No. 3, 1s., c.i.f. PODS: Tinnevely hand-picked, 1s. 8d. to 2s. as to quality; spot, manufacturing, 1s. 1d.; shipment, 11d., c.i.f. Alexandria PODS: Hand-picked from 7s. to 8s.; manufacturing, forward, 2s. 6d., c.i.f.

SENEGA. — Spot, 19s. 6d. per lb.; new crop, August shipment, 18s. 6d., c.i.f.

SLIPPERY ELM BARK. — Spot offered at 4s. 6d. per lb.

SQUILL. — Italian, spot, 175s. per cwt.; shipment, 160s., c.i.f.

STRAMONIUM.—Continental LEAVES, 85s. per cwt., spot.

STYRAX.—Spot, 13s. 6d. per lb.; shipment, 13s. 3d., c.i.f.

TONQUIN BEANS.—Para spot, 4s. 6d. per lb.; shipment, 3s. 10d., c.i.f.

TRAGACANTH.—Ribbon, No. 1, £175 per cwt.; No. 2, £160.

TURMERIC.—Madras finger, spot, 125s. per cwt.; shipment quoted at 112s. 6d., c.i.f.

VALERIAN ROOT.—Indian, spot, 210s. per cwt.; shipment, 200s., c.i.f.

WAXES. — (Per cwt.). BEES' — Dar-es-Salaam, 445s., shipment, 410s.; Sudanese, spot, 400s., in bond; shipment, 390s., c.i.f. CANDELLA, spot, 465s.; forward, 460s. landed. CANAUBA, fatty grey, spot, 310s.; shipment, 285s., c.i.f.; prime yellow, spot, 630s.; shipment, 585s., c.i.f.

Essential and Expressed Oils

ALMOND.—Spanish sweet oil is 6s. 6d. per lb. spot. Forward, 7s. 3d.

AMBER.—Rectified on the spot, 2s. per lb.

ANISE. — Chinese, 9s. 6d., spot, shipment, 9s. 6d., c.i.f.

BAY.—From 45s. lb. on the spot.

BERGAMOT.—Spot quotations for best oil are about 170s. per lb.

BIRCH TAR.—Rectified, 3s. per lb.

BOIS DE ROSE. — Brazilian spot from 16s. 6d.; shipment, 16s., c.i.f.

BUCHU.—Spot, from 280s. to 360s. per lb.

CADE.—Spanish from 2s. per lb. for drum lots.

CAJUPUT.—Spot from 11s. per lb.

CALAMUS.—Spot from 70s. to 100s. per lb. as to origin.

CAMPBOR, WHITE. — Chinese for shipment, 4s. 6d., c.i.f., per kilo; spot, 2s. 9d. lb., duty paid.

DILL.—Imported is from 34s. to 39s. per lb., spot.

EUCALYPTUS. — B.P. 70–75 per cent., 5s. 9d. per lb.; 80–85 per cent., 6s. 3d.

FENNEL.—Spanish sweet, 16s. per lb., duty paid.

GERANIUM. — Bourbon, 87s. 6d. to 92s. 6d., spot.

GINGER. — Imported (per lb.): Indian, 165s.; Chinese, 75s.; Jamaican, 132s. 6d.

JUNIPER. — B.P.C. is 32s. 6d. per lb. JUNIPER WOOD, from 6s.

LAVANDIN. — From 25s. to 30s. per lb. as to quality.

NUTMEG.—East Indian B.P. oil is about 40s. per lb. English distilled, 80s.

OLIVE. — For shipment: Spanish, £235–£240 per metric ton, f.o.b. Spanish port, Tunisian, £255 to £270 per metric ton, c. and f., London. Spot, £290 to £295 per long ton ex wharf.

ORANGE.—Floridan sweet oil, 4s. 6d. to 5s. 9d. per lb.; Spanish, 16s.

PEPPERMINT. — *Arvensis*: Chinese for shipment, 10s. 3d., c.i.f.; spot, 10s. 6d. Brazilian not quoted for shipment; spot, 12s. *Piperita*: Italian spot, 60s.; new crop forward, 82s. 6d. American, 35s. 6d. to 37s. 6d. per lb. as to make.

PINE. — *Pumilionis*, 30s. per lb.; *sylvestris*, 10s.; *abietis*, 16s.

ROSEMARY.—Spanish, 13s. 6d. per lb., duty paid.

RUE.—Spanish is 22s. 6d. per lb., spot.

SAGE.—Spanish, 22s. per lb.; Dalmatian, 26s.

SPEARMINT.—American oil on the spot, 50s. to 55s. per lb.

THYME.—Spot, 30s. per lb. for 45–50 per cent.

TANGERINE.—Sicilian best quality about 46s. per lb.

VETIVERT. — Bourbon, spot, 85s. to 90s. per lb.

YLANG YLANG. — Best oil quoted about 135s.

UNITED STATES REPORT

NEW YORK, SEPTEMBER 7: Brazilian MENTHOL moved up another 10 cents to \$4.60 a lb., as consumer demand became more active. COPAIBA BALSAM jumped up by 50 cents to a new rate of \$1.50 a lb. Higher per lb. among ESSENTIAL OILS were CEDAR LEAF at \$3.75, up 10 cents; distilled LIME at \$7.75, up 15 cents; LAVENDER SPIKE, at \$7.25, up 25 cents; SPEARMINT, at \$9, up \$1.25; and CARAWAY, at \$7, up \$1.35.

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," August 25

For surgical and medical apparatus capable of delivering liquids in atomised or finely divided form (10)

MEDIMIST, 864,349, by Genatosan, Ltd., Loughborough, Leics.

From the "Trade Marks Journal," September 2

For waving lotions, creams and lacquers, all being toilet preparations for the hair (1)

CAREFREE, 867,458, by Carefree Hairdressings, Ltd., Erdington, Birmingham.

For cosmetic preparations for the nails (3)

REVLON SUPER NAIL, 871,158, by Revlon (Suisse), S.A., Zurich, 5, Switzerland.

For household soap (3)

KEY, 873,777, by Hodgson & Simpson, Ltd., London, E.C.4.

For detergents (not for use in industry or manufacture) (3)

OMIN, 874,946, by Unilever, Ltd., Port Sunlight, Chcs.

For all goods but not including hair dyes or any goods of the same description (3)

CLARAX, 874,947, by Unilever, Ltd., Port Sunlight, Chcs.

For preparations, requiring the addition of milk, for bleaching the hair (3)

INECTO MILK BLEACH, 875,314, by Rapidol, Ltd., London, W.7.

For perfumes, non-medicated toilet preparations, cosmetic preparations, dentifrices, depilatory preparations, toilet articles, sachets for use in waving the hair, shampoos, soaps and essential oils (3)

RITUAL, 878,791, by Charles of the Ritz Distributors, Ltd., Burgess Hill, Sussex.

For detergents (not for use in manufacturing or industrial purposes) (3)

AYALA, B875,126, by W. B. Leach (Contractors) & Co., Ltd., Kentford, Newmarket, Suffolk.

For all goods (3) and for deodorants, anti-perspirants and medicated preparations for the treatment of the scalp (5)

G-MAN, B869,938-39, by Gillette Industries, Ltd., Isleworth, Middlesex.

For pharmaceutical preparations and substances for use in the treatment of muscular spasms (5)

CYCLOSPASMOL, B852,186, by N.V. Koninklijke Pharmaceutische Fabrieken V/H Brocades-Sheeman & Pharmacia, Amsterdam, Holland.

For pharmaceutical preparations and substances for the treatment of urinary infections (5)

AMANYL, 852,672, by Siegfried, A.G., Zofingen, Switzerland.

For pharmaceutical preparations; infants', invalids', and dietetic foods (5)

PROTASON, 854,133, by English Grains Co., Ltd., Burton-on-Trent, Staffs.

For sanitary substances, disinfectants and preparations for killing weeds and destroying vermin (5)

Device with words SANITATION FOR THE NATION, 853,755, by G. H. Wood & Co., Ltd., Toronto, Ontario, Canada.

For dental substances and materials, and adhesives for false teeth (5), for electrically-operated tooth-brushes (8) and for surgical and dental instruments and apparatus; and utensils for surgical and dental use (10)

TEK, 860,753-55, by Johnson & Johnson, New Brunswick, New Jersey, U.S.A.

For pharmaceutical preparations for human use, all being packed in aerosols (5)

MICROMIST, B868,667, by Aspro-Nicholas, Ltd., Slough, Bucks.

For biological substances for use as nutritive adjuncts to animal feeding stuffs (5)

ANIMEEL, 873,294, by Applin & Barrett, Ltd., Yeovil, Somerset.

For all goods (5)

Device with word PHARMEDICA, 871,246, by Johnson & Johnson, New Brunswick, New Jersey, U.S.A. PRENOMISER FORTE, 875,203, by Fisons Pharmaceuticals, Ltd., Loughborough, Leics.

For pesticides, fungicides, insecticides, rodenticides, herbicides, acaricides, nematocides and germicides (5)

KARAMATE, 874,139, by Lennig Chemicals, Ltd., London, W.C.1.

For preparations and substances, all containing hormones

(5)

COMBORMONE, B874,276, by Wellcome Foundation, Ltd., London, N.W.1.

For pharmaceutical preparations and substances, all in tablet form (5)

VITAPLUS, 876,055, by Allen & Hanburys, Ltd., London, E.2.

PATENTS

COMPLETE SPECIFICATIONS ACCEPTED

From the "Official Journal (Patents),"

September 2

Sulphonamides. Sandoz Patents, Ltd, 1,007,014, 18-substituted steroids and process for their manufacture, CIBA, Ltd, 1,007,016.

Benzenesulphonyl-ureas and process for their manufacture, Farbwerke Hoechst, A.G. 1,007,018.

Terpene derivations and the preparation thereof, Science Union et Cie. Soc. Francaise de Recherche Medicale, 1,007,019.

Photographic processes, emulsions and developer solutions, Agfa, A.G. 1,007,020.

Salts of substituted 1,2-dihydro-5-triazines, Parke, Davis & Co, 1,007,021.

12-Acylamino-steroids and to the production thereof, Shionogi & Co., Ltd, 1,007,022.

12-Alkylamino-steroids and to the production thereof, Shionogi & Co., Ltd, 1,007,023.

Aminoalkoxybenzene-sulphonamides, Smith Kline & French Laboratories, 1,007,025.

Twin-lens photographic cameras, Rollei-Werke Franke & Heidecke, 1,007,041.

Treatment of vitamins, Eastman Kodak Co, 1,007,161.

Hypocholesterolemic agent M-850 and method of preparation, Abbott Laboratories, 1,007,246.

Process of producing α -chloroglutaric acid, Asahi Kasei Kogyo K.K., 1,007,326.

Surgical syringe and closure cap thereof, Abbott Laboratories, 1,007,328.

Quinoxalin-3-oxides and benzo-1,2,3-triazine-3-oxides, Fisons Pest Control, Ltd, 1,007,331.

Halogen-containing phosphoric and thiophosphoric acid esters and formulations containing them, Cooper, McDougall & Robertson, Ltd, 1,007,332.

Poly-basic compounds and process for their production, A. Wander, S.A. 1,007,334.

Process for the N-deacylation of penicillins, CIBA, Ltd, 1,007,335.

Sulphonamides and a process for their preparation, Österreichische Stickstoffwerke, A.G. 1,007,346.

Production of magnesium hydroxide, Dow Chemical Co, 1,007,354.

Process for the production of xanthosine by fermentation, Ajinomoto Co., Inc, 1,007,365.

Process for preparing a dry, finely divided gelatin particle product containing a medicament product, Eastman Kodak Co, 1,007,465.

Slide projectors, Elmo Co., Ltd, 1,007,470.

Pyrazidine-3,5-dione derivatives, Sandoz Patents, Ltd, 1,007,578.

P-P-Trifluoromethyl-azobenzene and azoxybenzene and process for the production thereof, Sandoz Patents, Ltd, 1,007,579.

Beuz (c.d.) indole derivatives and the manufacture thereof, Upjohn Co, 1,007,583-84.

Allophanic acid derivatives and their preparation, Montecatini Soc. Generale per l'Industria Mineraria e Chimica, 1,007,585.

British patent specifications relating to the above will be obtainable (price 4s. 6d. each) from the Patent Office, 23 Southampton Buildings, Chancery Lane, London, W.C.2, from October 13.

NEW COMPANIES

P.C.=Private Company, R.O.=Registered Office

RODNEY NEWMAN PHARMACY, LTD. (P.C.)—Capital £1,000. To carry on the business of retail pharmacists, etc. Directors: Rodney C. Newman, M.P.S., and Pamela E. Newman, R.O.: 69 Church Road, London, S.W.13.

SCOTTS CHEMISTS (SOHO), LTD. (P.C.).—Capital £100. Subscribers: Peter A. Kraus, 44 Bedford Row, London, W.C.1, and Stuart Stern. The first directors are not named.

STRATENPORT, LTD. (P.C.).—Capital £100. To carry on the business of importers, exporters, manufacturers of and dealers in health, patent, chemical, concentrated and prepared foods, etc.

Subscribers: M. B. Maliney and A. T. Maliney, 5 Stanley Park Drive, Alpertown, Middlesex.

For medical, pharmaceutical and veterinary pre-

PRINT AND PUBLICITY

LAMBERT Chemical Co., Ltd., Eastleigh, Hants, are introducing four new Polycolor shades, chosen by *Vogue*, in four full-colour pages in the October 15 issue of that paper. The shades are black ebony (intense black); deep beech (rich, dark brown); glinting beech (medium brown); and autumn amber (golden, reddish brown). The promotion is being backed by television "commercials."

PRESS ADVERTISING

Christmas Advertising Programme

P&M-WARRICK, Lavender House, Seymour Road, London, E.10: Potter & Moore Christmas coffrets, In December issues of *Woman*, *Woman's Own*, *Honey*, *Modern Woman*, *Nova*, *She* and *Vogue*, and in T.V. Times.

PUBLICATIONS

Booklets and Leaflets

P&M-WARRICK, Lavender House, Seymour Road, London, E.10: Potter & Moore Christmas gifts (8p. folder).

Periodicals

JAMES A. JOBLING & Co., LTD., Wear Glass Works, Sunderland: The first of a new series of quarterly publications has been issued under the title "Joblinglass." It replaces the series of "Pyrex" technical bulletins. The new publication has been given a large format and employs colour liberally. Both laboratory and industrial glass are to be featured editorially. The magazine is printed in three languages (English, French, German) to encourage a wider readership on the Continent.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Monday, September 13

ENGINEERING MATERIALS AND DESIGN EXHIBITION, Olympia, London, W.14, Until September 17.

Tuesday, September 14

DONCASTER BRANCH, PHARMACEUTICAL SOCIETY, Ivanhoe hotel, Sprotborough, at 8 p.m. Wine tasting and address by speaker from Hay & Son, Ltd., Sheffield.

READING BRANCH, PHARMACEUTICAL SOCIETY, County Liberal club, Blagrave Street, Reading, at 8 p.m. Cheese and wine reception, and film evening.

Wednesday, September 15

MANCHESTER PHARMACEUTICAL GOLFING SOCIETY, North Manchester golf club, Rhodes house, Manchester Old Road, Middleton, Manchester, Competition for the Captain's prize.

Sunday, September 19

WORLD MEDICAL ASSEMBLY, British Medical Association house, Tavistock Square, London, W.C.1, Until September 25.

Courses and Conferences

MANAGEMENT INVESTIGATION SERVICES, 9 Radnor House, 93 Regent Street, London, W.1. One-day seminar for top and middle management on "Defence Against Industrial Espionage." October 27. Fee £12 12s. (including meals).

Advance Information

NATIONAL PHARMACEUTICAL UNION, Grand Pavilion, Porthcawl, at 2.30 p.m. South Wales area meeting. October 31. Mr. P. D. Lewis (N.P.U. marketing officer) on "Your Marketing Problems" and Mr. G. T. M. David (vice-chairman, Central N.H.S. (Chemist Contractors) Committee) on "All Your Other Problems." At Garden House hotel, Little St. Mary's Lane, Cambridge, at 12.15 p.m. Area meeting for members in N.P.U. areas East 2 and 3 and parts of areas East 1 and Metropolitan. Mr. W. Talvan Rees (chairman, N.P.U.) on "The Way Ahead," and Mr. A. Aldington (a member of the marketing policy committee) on "Thrive on Competition."



What doctors are reading about developments in drugs and treatments

A HIGHLY significant difference in the incidence of hypothyroidism was found when workers at Sheffield Royal Infirmary compared 220 patients on sulphonylurea drugs with 229 diabetics treated by other means. Thirty patients in the first group, and eight in the second were found to be hypothyroid, as judged by the estimation of protein-bound iodine. No clear relationship between the dose of sulphonylurea and the incidence of hypothyroidism was found, but incidence was shown to increase with the duration of therapy. Both groups had been matched for age, sex and duration of diabetes. The authors are of the opinion that sulphonylurea-induced hypothyroidism may account for failure to lose weight and general ill-health among so treated "maturity-onset" diabetics, and may well increase the tendency toward ischaemic heart-disease. (*Lancet*, September 4, p. 249.)

THE following comments on drugs appear in *Drug and Therapeutics Bulletin*: Antibiotics for the skin. Application of antibiotics or hydroxyquinolines to eczematous areas or to decubital ulcers incurs a special danger of skin sensitisation. Sensitisation is least likely with topical application of a tetracycline but, with that exception,

topical use of an antibiotic that may be used systematically is best avoided. Whether hydroxyquinolines or other antibacterial agents are as effective as the most appropriate antibiotic is unknown. Combinations of hydroxyquinolines with corticosteroids has not been shown to have any special advantage. (*D. & T.B.*, September 3.)

THE numbers of consultations and prescriptions issued in a general practice in Lancashire has been compared for the four weeks preceding and the four weeks following the abolition of prescription charges on February 1. Frequency of prescriptions per patient was found to have increased by 18.6 per cent. in the second period, though there was a decrease in the quantity prescribed per prescription (and consequently in the average cost.) The author believes that the increase in consultations (9.7 per cent.) may be attributable principally to the abolition of the charge. (*Practitioner*, September, p. 351.)

PROLINTANE hydrochloride improves sub-healthy patients who demand a tonic, concludes a general practitioner in Shropshire from the results of a controlled trial in his practice. The test preparation contained, in each 5 mls, 2.5 mgm. of prolintane hydrochloride,

1.7 mgm. of aneurine hydrochloride, 1 mgm. of riboflavin, 0.5 mgm. of pyridoxine hydrochloride and 5 mgm. of nicotinamide. The control was identical in taste and appearance but contained only the vitamins. Patients received the preparations in successive weeks, the order of administration being randomised. The results were assessed by sequential analysis. The effect of the drug (possibly a euphoriant action) was found statistically significant and not due to concurrently administered B vitamins. (*Practitioner*, September, p. 363.)

CONTEMPORARY THEMES

Subjects of contributions in current medical and technical periodicals,

- NEW PYRETHRIN-LIKE ESTERS with high insecticidal activity. *Nature*, August 28.
- SULPHONYLUREA. Hypothyroidism in diabetics treated with. *Lancet*, September 4.
- BETA-HEMOLYTIC STREPTOCOCCI in the South-west, with particular reference to tetracycline resistance. *Brit. med. J.*, September 4.
- IMMUNISATION in general practice. *Practitioner*, September.
- ANTICHOLINERGIC DRUGS in the management of duodenal ulcer. *Practitioner*, September.
- ALCOHOLIC INTOXICATION. Chemical tests for. *Practitioner*, September.
- EFFECTS OF ABOLISHING PRESCRIPTION CHARGES. *Practitioner*, September.
- PROLINTANE. Therapeutic trial of. *Practitioner*, September.
- IODINE-131-LABELLED THYROXINE-BINDING PREALBUMIN. Metabolism of, in man. *Science*, August 13.
- GLYCOSIDE BIOSYNTHESIS and the biochemistry of sugar nucleotides. *J. pharm. Sciences*, August.
- ANTIHYPERTENSIVE AGENTS, including thiazide-type compounds. Method for the evaluation of. *J. pharm. Sciences*, August.
- SALICYLATE DISTRIBUTION AND METABOLISM in man. Some aspects of. *J. pharm. Sciences*, August.
- ANDROGENS AND OESTROGENS. *Canadian pharm. J.*, July.

COMMERCIAL TELEVISION

The information given in the table is of number of appearances and total screen time in seconds. Thus 7/105 means that the advertiser's announcement will, during the week covered, be screened seven times and for a total of 105 seconds.

Period September 19 to 25	London	Midland	North	Scotland	Wales & West	South	North-east	Anglia	Ulster	Westward	Border	Grampian	Eireann	Channel Is.
PRODUCT														
4711 ...	—	1/15	—	—	—	—	—	—	—	—	—	—	—	—
Anadin ...	8/115	3/44	4/97	6/111	5/104	3/90	2/60	4/130	3/90	2/60	2/60	6/88	—	—
Andrews liver salts ...	1/30	—	—	3/90	5/135	—	3/90	3/90	5/150	4/120	—	3/90	—	—
Askit powders and tablets ...	—	—	—	28/196	—	—	—	—	—	—	3/21	3/21	—	—
Aspro ...	7/49	7/49	7/49	7/49	7/49	7/49	7/49	7/49	7/49	7/49	7/49	7/49	—	7/49
Bathjoys ...	2/60	2/60	—	—	—	3/90	2/60	—	3/90	—	—	—	—	—
Bisodol ...	—	—	—	—	5/35	5/35	—	—	—	—	—	—	—	—
Bunty baby products ...	—	—	—	—	—	—	—	—	—	1/15	—	—	—	—
Carnation corn caps ...	—	—	2/14	—	—	—	—	—	—	—	—	—	—	—
Clinic shampoo ...	2/60	2/60	2/60	2/60	2/60	2/60	6/180	2/60	4/120	2/60	4/120	4/120	—	8/240
Dentu-Creme ...	1/30	1/30	—	2/60	1/30	1/30	—	1/30	—	1/30	1/30	—	—	1/30
Dettol ...	—	—	—	—	—	—	—	—	3/21	—	—	—	—	2/14
Freezone ...	—	1/7	—	—	—	—	—	—	—	—	—	—	—	—
Goddess hairspray ...	—	—	—	—	—	—	—	—	—	—	3/90	—	—	—
Loxene shampoo ...	1/30	1/30	1/30	1/30	—	1/30	1/30	1/30	1/30	1/30	1/30	1/30	—	—
Moorland indigestion biscuits ...	—	—	—	—	3/45	—	—	—	—	—	—	—	—	—
tablets ...	—	—	1/15	2/30	—	—	—	4/28	—	—	—	3/21	—	—
Right Guard ...	1/30	1/30	1/30	1/30	1/30	1/30	1/30	1/30	1/30	1/30	1/30	1/30	—	—
Rinstead pastilles ...	2/30	2/30	2/30	2/30	2/30	2/30	2/30	2/30	2/30	2/30	2/30	2/30	—	10/60
Sanatogen selected multi-vitamins ...	1/30	3/30	2/30	3/30	2/30	2/30	3/30	2/30	3/30	2/30	3/30	3/30	—	—
Signal tooth-paste ...	3/90	3/90	3/90	4/120	3/90	1/30	3/90	5/150	3/90	5/150	4/120	2/60	—	6/180
Sona bath additive ...	—	—	—	—	—	4/120	—	—	—	—	—	—	—	—
SR tooth-paste ...	1/30	1/30	1/30	4/120	7/210	—	2/60	3/90	2/60	2/60	3/90	2/60	—	3/90
Steradent ...	2/60	1/30	1/30	2/60	2/60	1/30	2/60	1/30	—	1/30	1/30	1/30	—	1/30
Super Silver Gillette ...	4/120	4/120	4/120	4/120	4/120	4/120	4/120	4/120	4/120	4/120	4/120	4/120	—	—
Wright's coal tar soap ...	1/15	—	—	1/15	1/15	1/15	1/15	1/15	—	1/15	1/15	1/15	—	—

cumulative price changes

AMENDING C & D QUARTERLY PRICE LIST FOR SEPTEMBER 1965

coline (49 AF)										Emge (49 AF)										Isothionaiodine (49 AF)									
ampoules										ampoules 10mils 3 64 0 16 0 8 6										simple ampoules									
0.02gm in 1ml 8 50 0 — 5 7										tablets 40 69 0 17 3 9 2										c vitamin B, 6 69 0 17 3 9 2									
0.05gm 8 57 0 — 6 4										Encynex (49 AF)										Jergens (261 Christy)									
0.1gm 8 68 0 — 7 7										tablets 50 45 0 11 3 6 3										hand lotion 302 24 0 6 0 3 3									
0.2gm 8 86 0 — 9 7										500 383 0 95 9 52 8										6oz 40 2 10 1 5 6									
notriphos (1077 Rona)										100gm 85 0 21 3 11 3										classic 96 0 24 0 13 9									
tablets 100 210 0 — 23 4										Ethyl chloride (115 Bengue)										Johnsons (672 Johnson)									
1000 — — — —										3mils 12										baby gift new 234 6 48 0 32 6									
epatine (49 AF)ts4B										5mils 12										Keystone Long-Aid (975 PDS)									
suppositories 16 109 0 27 3 14 5										Etophylate (1077 Rona)										glucose drink 21 4 3 2 2 9									
gyl (49 AF)ts1										tablets forte 500mgm										D Lanolin Gold (172 BMCL)									
tablets 50 35 0 — 4 1										500's										Lastonet (733 Lastonet)									
200 86 0 — 10 1										Etophylate PP (1077 Rona)ts1S4A										aeronet kneecaps 8 Opr — 12 0									
in VK (1432 APSL)TS										suppositories 12 8 1ea — 10 10										baby pants junior 12 0 — 1 6									
ena (60 Arden)										Externe (1567 Externe)										crepe bandages (Lastoyarn)									
raveller II case										cleanser 8 4ea 2 1ea 14 7										4in 38 0 — 4 9									
956-00 — — 30 0										day cream 7 0ea 1 9ea 12 3										elastic socks for men									
pecial cleansing cream										night cream tube 18 0ea 4 6ea 31 6										18 Opr — 27 0									
120.04										jar 22 8ea 5 8ea 39 8										8 0 — 1 0									
Complexion Clear										special night treatment										D finger stalls									
120.02 — — 17 6										28 0ea 7 0ea 49 0										foot powder									
120.04 — — 32 6										Femivir (49 AF)ts4B										D foot spray									
stone (1077 Rona)										tablets 50 52 0 13 0 7 2										jock strap standard support									
nasal drops 31 0 7 7 4 1										Fleet (49 AF)										52 0 5 2 6 11									
ophthalmic										enema 52 0 13 0 6 11										D Lastorinse									
ellin (1023 Radiol)										Fresca (1333 Wigmore)										Lentheric (753 Lentheric)									
aspirin spirit liniment										Cologne for men — — 25 0										body lotion — — 6 9									
4oz 46 3 — 5 9										Gabail (49 AF)										Lino-o-lin (657 IL)									
16oz 11 3ea — 17 0										bismuth suppositories										anti perspirant 33 8 8 5 4 11									
al (333 Cupal)										capsules ts4B 20 55 0 13 9 7 4										skin perfume deodorant 33 8 8 5 4 11									
bubble pack blocks 13 10 — 1 6										dp 100 224 0 — —										D Lipidol (115 Bengue) entire entry									
e-Phages (49 AF)										elixir bromo-val ts4B										fluid 20mils 103 6 — 11 6									
ampoules										6oz 44 0 11 0 6 1										ultra fluid 10mils 108 0 — 12 0									
coli-phage										16oz 92 0 23 0 12 8										with chlorophyll									
5mils 10 152 0 — 16 11										40oz 196 0 49 0 27 0										10mils 192 0 — 21 4									
intesti-phage										80oz 374 0 93 6 51 6										viscous 40%									
5mils 10 152 0 38 0 20 1										formula 2 6oz 44 0 11 0 6 1										20mils 88 6 — 9 10									
rhino-phage										sodium gentisate tablets										with sulphaniilamide ts4B									
4mils 8 152 0 38 0 20 1										0.5gm 60 131 0 — 14 3										20mils 121 6 — 13 6									
ue's Dragees										500 914 0 — 99 1										D Lloyds (629 HL)									
en (1153 SKF)										syrup pertussis ts4B										adrenaline cream tube									
tablets										4oz 39 0 9 9 5 5										adrenaline cream tube									
iepegs (122 Bickiepegs)										16oz 92 0 23 0 12 8										30gm 31 6 — 3 6 1									
22 6 — 2 6										40oz 196 0 49 0 27 0										Lumigerine (49 AF)									
obalin (930 P&B)										Gluco-Thricil (938 PD)										tablets 40 122 0 30 6 16 2									
syrup										1oz 40 0 — 5 0										Mason Pearson (807 MPB) hairbrushes									
40oz 19 0ea — 28 6										Glycinello (664 JS&C)										ladies pocket nylon 7 9ea 2 0ea 13 8									
x (736 Lautrec)										hand cream 39 4 9 10 5 9										bristle 14 0ea 3 6ea 24 6									
greasy hair shampoo										Goya (532 Goya)										D shingle nylon									
tube										Cedar Wood										D bristle									
bottle 20 0 5 0 3 0										deodorant stick 44 8 10 10 6 6										gentle 14 0ea 3 6ea 24 6									
se Salome (1372 CCL)										Guanimycin (34 A&H) ts4B										universal 15 5ea 3 1ea 27 0									
perfume miniature 32 2 7 8 5 0										60 0 — 7 6										superior 21 7ea 5 5ea 37 9									
agen (912 O)										Gumtex (347 Dalmás)										junior 28 0ea 7 0ea 49 0									
ar, 60gm										20 0 5 0 2 11										popular 49 8ea 12 5ea 87 0									
500gm										Hepastab (147 Boots)										standard 44 10ea 11 3ea 78 6									
genine (49 AF)										forte 2 mils 6										extra large 11 1ea 2 10ea 19 6									
tablets 0.25gm 10 22 0 5 6 2 11										Hepvisc (49 AF)ts7										handy nylon 32 7ea 8 2ea 57 0									
0.5gm 50 94 0 23 6 12 5										tablets 50 54 0 13 6 7 6										men's military									
I (33 Cupal)										250 235 0 58 9 32 4										extra large 49 8ea 12 5ea 87 0									
ild sore lotion 11 10 2 8 1 9										dp 500 430 0 — —										extra small 44 10ea 11 3ea 78 6									
sk cream 22 6 5 1 2 11										Hexital (922 Ortho) sls4A										universal 15 5ea 3 1ea 27 0									
pastilles										tablets 100 56 0 — 7 0										superior									
cerin lemon and honey										dp 500 222 0 — —										junior 21 7ea 5 5ea 27 0									
stilles Gees										Homovir (49 AF)ts4B										popular 28 0ea 7 0ea 49 0									
linctus†										tablets 50 52 0 13 0 7 2										D standard									
e ointment										Hypotensyl (49 AF)										D Methocidine (1077 Rona)									
re throat tablets										tablets 50 38 0 9 6 5 3										42 0 — 4 9									
illiantine										250 172 0 43 0 23 8										Methral-N (583 HP)									
neillitis and sore throat mixture										Ingram (172 BMCL)										topical ointment 10 gm									
fresh (1262 UL)										Lanolin Gold lather										Minette (1110 Schuberth)									
40gm 17 1 4 3 2 3										shave cream 23 5 5 6 3 3										cotton gloves 22 9 2 3 3 3									
70gm 24 7 6 2 3 3										Iodamelis P (49 AF)										D Mycolactine (49 AF)ts7									
itt's (372 De Witt)										drops 50mils 128 0 32 0 16 11										tablets 50 30 0 7 6 4 2									
ough										tablets 50 64 0 16 0 8 6										250 110 0 27 6 15 2									
ontrol ts7 2oz 20 0 — 2 6										Irradex (938 PD)										D Narcotile (115 Bengue)									
y (816 Mayborn)										11b 60 0 — 7 6										ampoules 3 and 5mils									
ertain white 27 0 — 3 0										2 1/2lb 120 0 — 15 0										Neostol (49 AF)ts1s4A									
eth Arden (60 Arden)										Isothionaiodine (49 AF) entire entry										tablets 100 124 0 — 14 6									
mour veil set										D										Nepenthe (459 Ferris)									
547-00 — — 45 6																				50mil size									
compact 546-00 — — 24 6																													
refill 548-00 — — 10 6																													
blending brush																													
796-00 — — 21 0																													

Nestosyl (115 Bengue)				dp 1000 480 0				Tetrazets (837 MSD)			
directional nozzle 180 0				Riviera (735 Loughton)				Thionaiodine V (49 AF)			
ovules				Sauna bath and shower brush				tablets 40 66 0			
Nice 'n Easy (172 BMCL)†				50 9 12 8½				Trimmetts (1262 UL)			
65 0 16 3 9 6				Ronazine (1077 Rona)				Trimmers 22 6			
Nidoxital (922 Ortho)†s4A				tablets 15 18 0 4 5 2 4				Trinitrine Cafeine (49 AF)†s7			
capsules 20 120 0				Rosedale (261 Christy)				pills 60 48 0 12 0			
dp 100 480 0				bubble bath				—Papaverine pills†s1			
Novalkal (49 AF)†s7				family pack 25 0 6 3 3 6				60 77 0 19 3			
tablet 100 119 0				hair spray aerosol large				Trufood (1249 Trufood)			
Nydrane co (1077 Rona)†s4A				34 6 8 7½ 4 11				junior cereal 8oz 14 5			
tablets 250 and 1000				shampoo 22 0 5 6 2 11				Tulle Gras Lumiere (49 AF)			
D Old Spice (1131 Shulton)				Roter (444 FAIR)				compress 10cm x 10cm			
after shave skin conditioner				tablets 40 60 0 15 0 8 3				10 100 0			
3750 63 6 15 6 9 9				dp 120 174 0 43 6 23 3				D Tylan (1477 Elanco) existing entries			
Cologne 49 0 11 11 7 6				dp 360 504 0				Tylan (1477 Elanco)			
Ortho-Novin (922 Ortho)†s4B				dp 720 954 0				Injectable 6.25gm 20 0ea			
Calendar pack 6's 34 0ea				Sans Egal (1101 Sangers)				12.5gm 39 2ea			
Osbiil (971 P5MB)				lipstick 19 2 4 9½ 2 10				soluble 50gm 75 0ea			
tablets				D Savett (1327 WLL)				100gm 142 10ea			
capsules				Swandown (1206 SC)				tablets 250mgm			
0.5gm 6x6 18 4				beauty film 19 6 4 10 2 9				vet. formula 50 44 0ea			
Pan (451 F&J)				Beauty Glo compact				20gm 33 4ea			
shampoo 51 5 12 10 7 6				25 6 6 4 3 9				Tylan 50 (1477 Elanco)			
86 0 21 6 12 6				refill 19 6 4 10 2 9				Injection 25mils 5 10ea			
Pancrepatine (49 AF)†s1				bubble bath				Tylan 200 (1477 Elanco)			
pills 100 99 0 24 9 13 1				sachet 6 6 3 10 1 0				Injection 50mils 35 0ea			
D Paraflex (1383 McNeil)				cleansing cream 30 0 7 6 4 6				Urapseptine (49 AF)			
Paraflex (922 Ortho)				constant colour				granules 80gm 71 0 17 9			
tablets 25 45 0 11 6 6 7½				creamy hand lotion				Uteplex (1077 Rona)			
100 162 0 40 6 23 7½				18 0 4 6 2 6				oral ampoules 2mgm/2mils			
dp 500 720 0 180 0				eye make up remover				120's			
D Parafon (1383 McNeil)				10 0 2 6 1 8				D Vallergan (971 PSMB)			
Parafon (922 Ortho)				pencil 7 6 1 10 1 3				suppositories all sizes			
tablets 25 39 0 10 0 5 8½				shadow stick 19 6 4 10 2 9				Victor (1333 Wigmore)			
100 144 0 36 0 21 0				face powder 24 0 6 0 3 6				Acqua di Selva			
dp 500 660 0 165 0				D foundation cream both sizes				080 —			
forte 25 54 0 13 6 7 10½				foundation cream 25 6 6 4 3 9				081 —			
100 192 0 48 0 28 0				hair colour shampoo				082 —			
dp 500 900 0 225 0				10 0 2 6 1 8				083 —			
D Paralgin (901 Norton)				hair set shampoo 4 3 1 11 8				after shave lotion			
tablets dp 100 8 6ea				hair spray perfumed 35 0 8 9 5 0				040 —			
dp 500 40 0ea				D Lip-glo lipstick				041 —			
Parke Davis (938 PD)				Lip-glo lipstick propelling				deodorant stick			
thrombin topical 304 0				19 6 4 10 2 9				103 —			
ephedrine compound elixir				lip shape pencil 7 6 1 10 1 3				pre-shave			
4oz 36 0 9 0 5 3				make-up remover 10 0 2 6 1 8				048 —			
Philishave (977 PE)				moisturising cream 30 0 7 6 4 6				talcum			
Diplomat shaver 99 11ea 24 4ea 157 6				nourishing cream 30 0 7 6 4 6				Vitepron (930 P&B)			
Envoy shaver 98 3ea 24 0ea 155 0				perfume 15c.c. 25 6 6 4 3 6				capsules 100 76 0			
Phospho-soda (49 AF)				perfume spray handbag				500 24 0ea			
solution 6oz 76 0 19 0 9 10				45 0 11 3 6 6				Wasp-eze (1566 WMCC)			
Plesmet F.A. (276 C&C)				shampoo sachet 4 3 1 1 8				(distributors 812 M&P and 179 BDH)			
tablets 100 48 0 — 6 0				Skin-glo cream 13 7 3 5 1 11				aerosol for stings			
1000 27 0ea — 40 6				D Skin-glo liquid 30 0 7 6 4 6				AMENDMENTS TO KEY			
Preen Sprayshield (664 JS&C)				D Teen and Twenty				TO SUPPLIERS			
48 0 — 5 11				D turtle oil cream both sizes				95 Baxter = Baxter Laboratories, Ltd., Caxt			
Quixalin (1176 Squibb)				D turtle oil cream 45 0 11 3 6 6				Thetford, Norfolk. Thetford 2081.			
tablets 0.25gm 24 8 0ea — 12 0				D turtle oil lotion 45 0 11 3 6 6				691 Kemsales = Kemsales, Ltd., Peck House, N			
100 30 0ea — 45 0				D Syrupus pectoralis rub. (459 Ferris)				Sussex, Newhaven 961.			
Radian (1023 Radiol)				D 1 litre size				C 1167 Spa = Spa Brushes, Ltd., Freeman			
bath salts 11b 37 0 9 3 5 0				D Tabloid (208 BW)				Chesham, Bucks. Chesham 4951.			
massage cream				D emetine and bismuth iodine gr 1				1110 Schuberth = A. Schuberth & Co., Ltd.,			
2oz 25 8 6 5 3 6				D emetine and bismuth iodine 60mgm †s1				Street, Ware, Herts. Ware 2204.			
4oz 37 0 9 3 5 0				36 244 0 — 30 6				1239 Tobal = Tobal Laboratories, Ltd., Heskett			
11b 9 0ea 2 3ea 14 6				D Tannafax (existing entry)				Portman Square, London, W.1. Hunter 1200.			
50 37 0 9 3 5 0				D Tannafax (208 BV)				1566 WMCC = West Mount Chemical Co			
100 55 0 13 9 7 6				17.5gm 16 0 4 0 2 4				19 Borough Road, Sunderland.			
2oz 40 8 10 2 5 6				100gm 44 0 11 0 6 5				1567 Externe = Externe Co., Ltd., 86A Richmo			
4oz 37 0 9 3 5 0				D Temadex (208 BW)				Kingston-on-Thames, Surrey. Kingston 6547.			
8oz 55 0 13 9 7 6				D Temadex (208 BW)VPO							
16oz 9 0ea 2 3ea 14 6				skin dressing							
Rarical (922 Ortho)				D (vet) 25gm tube 6							
tablets 100 61 0 — 7 7½											

THIS WEEK'S CHANGES

Prices are given in the sequence: Trade price per doz./purchase tax per doz./retail price (bold if maintained), thus:—17s 11d/4s 3d/2s 3d. A dash — in any column indicates that the manufacturer has provided no figure appropriate to that column.

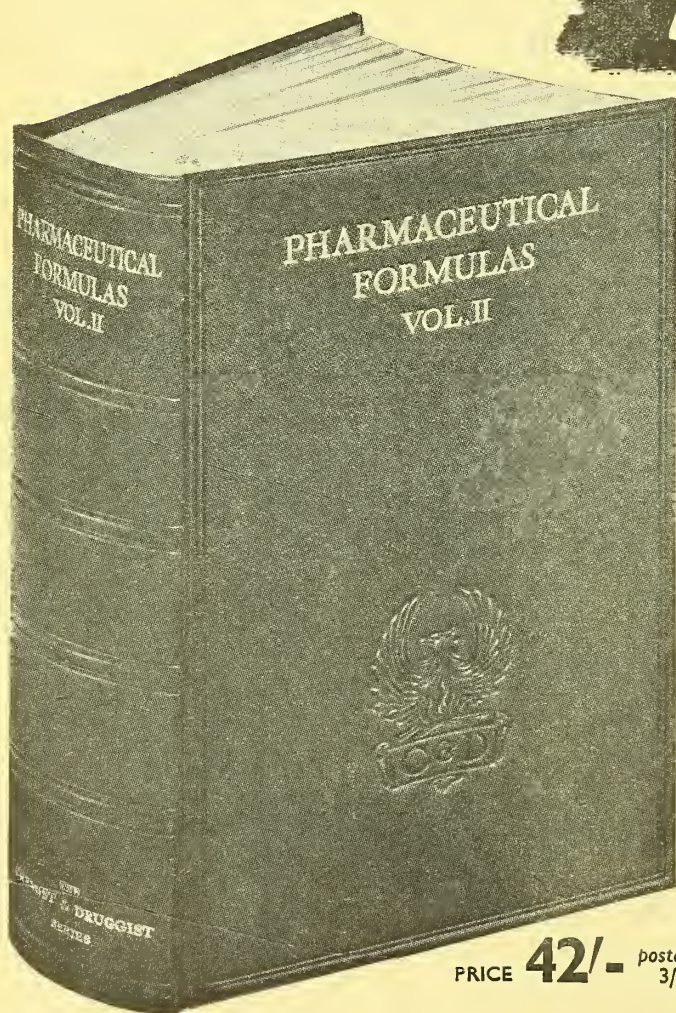
●	Acthar (61 APC)†s4B intravenous 45 I.U.	48	0	—	—	R	Anapolon (649 ICI)†s4B tablets 5mgm	100 52 1½ea 500 249 6½ea	—	78 2 374 4	Ayrton (78 AS&Co) balsam of glycerine, lemon & honey (Beehive) 4oz	15 0	3 9		
●	Airam (713 KH) MC health lamp No. 5 stand and infra-red bulb ultra-violet	—	—	—	110 0	●	Armyl (61 APC) T5 capsules	16 14 6ea 100 87 4ea 1000 843 6ea	— — —	— — —	A	bronchial cough mixture 8oz	15 0	3 9	
	Alpine stand only infra-red bulb ultra-violet	—	—	—	87 6 55 0 21 6						R	chilblain ointment tablets 50	14 0 18 0	3 6	
	bulb	—	—	—	87 6						A	childrens cough syrup 2½oz	16 0	4 0	
	bulb	—	—	—	87 6							glucose powder 1lb	16 0	—	
	bulb	—	—	—	87 6							golden eye ointment	7 3	1 10	
●	All Fours (488 Fylde) candy 1lb	1 11ea	3½ea	3 4								hydrocortisone T5. cream			
●	D candy mixture † 8oz	16 8	4 2	2 6							●	0-5% 15gm 1-0% 15gm	30 0 48 0	—	
	Ambrosium (75 AAL) honey 1lb	31 6	—	3 3		D	Astingol (78 A5&Co) cream					0-5% 15gm 1-0% 15gm	30 0 48 0	—	
	2lb	60 0	—	6 3		A	Aurum Ambrosium (75 AAL) for rheumatism 4oz	51 4	12 10	7 6		ointment	0-5% 15gm 1-0% 15gm	30 0 48 0	—
A	snig oil 1oz	14 0	3 6	2 0			8oz	96 0	24 0	14 0		500gm	65 0ea	—	
	2oz	24 0	6 0	3 6			16oz	14 10ea	3 8½ea	26 0	●	lanolin (toilet) tube 10 0	2 6		
	4oz	41 0	10 3	6 0		R	Avloclor (649 ICI) tablets 0.25gm	100 12 7ea 500 55 4ea	— —	18 10½ 83 0	●	malt extract 1lb	26 0	—	
D	3oz	—	—	—											

713 KH=M.S. Krausz-Harari, Medical, Electrical & Technical Supplies, 87 Ravensdale Road, London, N.16. Stamford Hill 7000.

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